In Two Sections

Section 1

The EDISON ELECTRIC INSTITUTE BULLETIN

September 1957

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Meeting Tomorrow's Manpower Needs

Donald S. Kennedy

The 1958 Housepower Program

Toward Effective Supervision

W. O. Turner

Developing Morale and Loyalty

C. Herald Campbell

Legislative Actions Relating to Nuclear Power Development

Employee Training, Development

D. A. Bartlett

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry
(Includes Investor-Owned Companies, Cooperatives, and Government-Owned Utilities)
June, 1956-1957

SOURCE AND DISPOSAL OF ENERGY—MONTH OF JUNE

	1957	1956	%
NET GENERATION* (Kwhrs in Thousands)			
By Fuel Burning Plants	40,873,052	39,402,421	+ 3.7
By Water Power Plants	11,179,538	10,048,531	+11.3
Total Generation	**52,052,590**	**49,450,952**	**+ 5.3**
Add—Net Imports Over International Boundaries	261,228	365,351	−28.5
Less—Company Use	144,628	130,854	+10.5
Less—Energy Used by Producer	1,298,369	1,262,435	+ 2.8
Net Energy for Distribution	**50,870,821**	**48,423,014**	**+ 5.1**
Lost and Unaccounted for	5,257,349	5,265,727	− 0.2
Sales to Ultimate Customers	**45,613,472**	**43,157,287**	**+ 5.7**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of June 30th			
Residential or Domestic	46,258,097	44,985,832	+ 2.8
Rural (Distinct Rural Rates)	1,638,810	1,676,567	− 2.3
Commercial or Industrial:			
Small Light and Power	6,178,146	6,109,542	+ 1.1
Large Light and Power	305,177	292,793	+ 4.2
Other Customers	179,515	171,723	+ 4.5
Total Ultimate Customers	**54,559,745**	**53,236,457**	**+ 2.5**
KILOWATTHOUR SALES—During Month of June (Kwhrs in Thousands)			
Residential or Domestic	11,204,775	10,198,188	+ 9.9
Rural (Distinct Rural Rates)	984,873	975,032	+ 1.0
Commercial or Industrial:			
Small Light and Power	7,934,744	7,316,271	+ 8.5
Large Light and Power	23,814,875	23,023,465	+ 3.4
Street and Highway Lighting	347,581	322,350	+ 7.8
Other Public Authorities	958,202	928,629	+ 3.2
Railways and Railroads:			
Street and Interurban Railways	171,067	186,186	− 8.1
Electrified Railroads	141,395	155,405	− 9.0
Interdepartmental	55,960	51,761	+ 8.1
Total to Ultimate Customers	**45,613,472**	**43,157,287**	**+ 5.7**
Revenue from Ultimate Customers (Thousands)	**$758,054**	**$709,821**	**+ 6.8**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended June 30, 1957			
Kilowatthours per Customer	3,063	2,879	+ 6.4
Average Annual Bill	$79.03	$75.43	+ 4.8
Revenue per Kilowatthour	2.58¢	2.62¢	− 1.5

* By courtesy of the Federal Power Commission.

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The objectives of the Edison Electric Institute are:

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

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The EDISON ELECTRIC INSTITUTE BULLETIN

September, 1957

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CONVENTIONS AND MEETINGS

1957

OCTOBER

1- 2 EEI Dealer Coordination Committee, Sinton Hotel, Cincinnati, Ohio

2- 3 PEA 50th Annual Meeting, Bellevue-Stratford Hotel, Philadelphia, Pa.

2- 4 Indiana Electric Association, French Lick-Sheraton Hotel, French Lick, Ind.

2- 4 Missouri Valley Electric Association Sales & Rural Conference and Home Service Workshop, Lassen Hotel, Wichita, Kan.

2- 5 22nd Annual Conference, International Association of Electrical Leagues, Sinton Hotel, Cincinnati, Ohio

7- 8 EEI Mid-Atlantic Home Service Workshop, Philadelphia, Pa.

7- 9 EEI Prime Movers Committee, Hotel New Yorker, New York City

7- 9 ASLE-ASME Lubrication Conference, Royal York Hotel, Toronto, Canada

9 EEI Home Service Committee, Warwick Hotel, Philadelphia, Pa.

9-11 EEI Area Development Committee and 4th Annual Workshop, Phoenix Hotel, Lexington, Ky.

10 ECAP Management Group Meeting, New York City, N. Y.

10-11 Southeastern Electric Exchange Accounting Conference, Fort Sumter Hotel, Charleston, S. C.

16-18 Wisconsin Utilities Association Annual Convention, Schroeder Hotel, Milwaukee, Wis.

17-18 EEI Insurance Committee, Dearborn Inn, Dearborn, Mich.

17-18 EEI Transmission and Distribution Committee, Statler Hotel, Boston, Mass.

17-18 PEA Relay Committee Meeting, Abraham Lincoln Hotel, Reading, Pa.

21-23 ASME Power Conference, Hotel Americus, Allentown, Pa.

21-25 National Safety Congress, Conrad Hilton Hotel, Chicago, Ill.

23-25 EEI-AGA Accounting Division Taxation Accounting Committee, Williamsburg Inn, Williamsburg, Va.

24-25 Oklahoma Utilities Association Electric Light & Power Division District Conferences—Oct. 24—Western Dist., Woodward, Okla. Oct. 25—Eastern Dist., Bartlesville, Okla.

28-30 4th Annual Conference of Atomic Industrial Forum, Coliseum, New York City, N. Y.

1957

28-30 NARUC Annual Convention, Peabody Hotel, Memphis, Tenn.

31-Nov. 1 PEA Transmission and Distribution Committee, Lord Baltimore Hotel, Baltimore, Md.

NOVEMBER

6- 8 EEI Accident Prevention Committee, Penn-Sheraton Hotel, Pittsburgh, Pa.

7- 8 Pacific Coast Electrical Association Hawaiian Conference, Reef Hotel, Honolulu, Hawaii

9 EEI Area Development Committee, Phoenix Hotel, Lexington, Ky.

9-10 EEI Commercial Division Executive Committee, Roosevelt Hotel, New York City, N. Y.

10-11 EEI Area Development Workshop, Phoenix Hotel, Lexington, Ky.

11-15 NEMA Annual Meeting, Traymore Hotel, Atlantic City, N. J.

12-13 EEI Southern Region Home Service Workshop, Atlanta, Ga.

13-14 Pacific Coast Electrical Association, Services Section, Villa Hotel, San Mateo, Calif.

14-15 EEI Accounting Division Advisory and Executive Committees, The Cloisters, Sea Island, Ga.

18-21 AIEE Conference on Magnetism and Magnetic Materials, Sheraton Park Hotel, Washington, D. C.

19 PIP Inter-Regional Committee, (Noon to 5 p.m.) Mayflower Hotel, Washington, D. C

DECEMBER

1- 6 ASME Annual Meeting, Statler Hotel, New York, N. Y.

2- 4 EEI-AGA Accounting Division Electronics Seminar, Sheraton Cadillac Hotel, Detroit, Mich.

5- 6 EEI Industrial Relations Committee, Jointly with the New England Personnel Group, and probably the Employee Relations Committee of the Electric Council of New England, Sheraton Plaza Hotel, Boston, Mass.

9-10 EEI-AGA Accounting Division Depreciation Committee, Lord Baltimore Hotel, Baltimore, Md.

11 PIP Steering Committee, New York City

13 ECAP Management Group Meeting, New York City, N. Y.

The EDISON ELECTRIC INSTITUTE
BULLETIN

Meeting Tomorrow's Manpower Needs

By Donald S. Kennedy
President, Edison Electric Institute and President, Oklahoma Gas and Electric Co.

An address before the Northwest Electric Light and Power Association, Glacier National Park, Mont., Sept. 6, 1957

THE record of the electric light and power companies of this country is one of which we as Americans can be justly proud. The tremendous growth of power capacity; the satisfactory response to all demands of this nation, in both war and peace, since electricity was first placed in commercial use; the financing of a rapidly expanding physical plant on the open market; the continuous decrease in price charged for this commodity in the face of rising costs, particularly during the past 20 years; and up to now, the adequate planning for the future: all these are tributes to the vision, energy and imagination of the free men who developed this industry in America.

This, then, is the story of electric power in the United States. And, based on all trends and indications, the future holds promise of far greater expansion than the past. One might say that the history of the industrial activity and the increase in the standard of living in the United States during the past 75 years has been almost directly geared to our expanded use of electricity. There are, however, indications of a developing weakness which, unless corrected, may retard such progress in the field of electric power as well as in several other basic industries, including the chemical and petroleum industries. I refer to the decreasing supply of manpower in engineering, chemical and even auditing capacities.

We are no longer an adolescent industry or an immature nation. We must think more broadly and more distantly to anticipate a developing critical need in these fields if we are to be able to expand the electric power industry rapidly enough to maintain the United States' international supremacy.

As you all know, the United States has greater electric power capacity than the next seven nations combined. Specifically, these next seven nations, in descending order of capacity, are Russia, Great Britain, West Germany, France, Canada, Japan, and Italy.

Religion and Science Complementary

In one sense, to maintain this supremacy through scientific education and "know-how" may prove to be our salvation in preserving in America that very freedom which made us great and in preserving an intellectual monotheistic religion as opposed to godlessness and atheism. This is a practical illustration of the contention that religion and science are not necessarily contradictory one with the other but rather can often be complementary.

It is sometimes helpful to review briefly the past in determining future courses in a given situation, so let us reminisce just a bit. The first power station began operating in 1882, under the direction of Thomas A. Edison. The popularity of electric service was immediately established as a most flexible source of energy. Its wide range of uses and its possibilities in almost numberless ways opened a whole new avenue of adventure for Yankee ingenuity.

In those years, about 75 per cent of the work done in America was performed by men and animals, and only 25 per cent was accomplished through machines. After 75 years of electricity and some other forms of energy which were made possible primarily through electricity, 98½ per cent of work done in 1957 was accomplished by machines, with only 1½ per cent being done by men and animals. Each American worker has at his disposal the equivalent of 279 helpers working for him; but more important, because of automation, electronics and hitherto undreamed of possibilities through atomic energy, the progress anticipated in the field of electric power during the next 10 to 20 years may make the past use of electric power appear almost stagnant.

Because we in America have developed power and tools to a higher degree than any other nation, we are able to produce more. As a consequence, we consume more and this unquestionably is the reason for our having the highest standard of living presently or in the history of the world.

During these same 75 years, since 1882, the electric industry has doubled its output each succeeding decade. Present indications are that this rate of growth in America will be speeded up in the future. Most recent forecasts show that we may expect a doubling in output during each eight years instead of each 10. It would seem highly profitable to examine what effect such accelerated expansion of the industry is having and will have on the power companies, giving particular attention to the need for technical manpower. But first let us consider the following facts:

1. America's electric power needs

have increased substantially more rapidly than its growth in population.

2. Up to this point, the private investor-owned companies have always provided greater capability each year than the demand. This remarkable record has been true during periods of both peace and war.
3. American investor-owned companies have successfully attracted the huge blocks of capital required to underwrite this tremendous expansion of physical plant.
4. The earnings of the investor-owned companies have been sufficiently great to pay the investors a reasonable return which would attract the needed additional capital.
5. The industry has steadily reduced cost of generation and loss of current in transmission and distribution. This has been done largely through engineering and technical skill and through long-term planning in developing, first, integrated systems, and then vast interconnections such as the Southwest Power Pool in my part of the country.
6. Such economies have been effected in the face of an almost steady increase in the cost of living index, particularly since 1916.
7. The price charged the customer has been steadily reduced until the most recent years, in which some rate increases have been mandatory in order to offset the inflation which has reduced the dollar to less than one-half its value of some 20 years ago.
8. The industry has performed satisfactorily as a natural monopoly under the close scrutiny and supervision of state and regulatory commissions as well as other agencies such as the Securities and Exchange Commission.
9. Sales have increased in step with the expansion of the industry. Best evidence of this is that the output has doubled each decade. Few, if any, other businesses can boast this record.

In the past, the electric utility field has attracted adequate numbers of engineering graduates, principally because an engineer can try out his ability in a number of fields within the electric utility in an attempt to "find himself."

Examples of the electric utility field in which he might try to find his niche are engineering design, construction engineering, operating (efficiency) engineering, research, system planning, forecasting and economics, sales engineering, and safety engineering. From these several categories of specialization, it is quite understandable that the engineer is in a position to develop outstanding executive capacity.

Traditionally, about one-half of the top executives of power companies "arrive" through the engineering section, but a change seems to have developed within the past six or seven years. The field is still there, but candidates for such positions are not making application. Basically, there can be only two major reasons for such a dearth of engineers in the electric power industry: (1) some other type of industry is making a more attractive offer; or (2) an insufficient number of men in this field are being graduated; or possibly both.

Job Attractions

A survey conducted by The Opinion Research Corp., located at Princeton, N. J., is considerably enlightening in some respects. This study undertook to determine what the majority of young college graduates found most attractive in the jobs they are seeking. The results showed that chance for advancement and interesting work were the two things considered most important by the majority of college students, while starting pay and fringe benefits were of lesser importance.

Today's young men are not overly concerned with job security, as such. They know jobs are plentiful, and don't expect the demand to fall off for quite some time. They're looking for a challenge—something they can sink their teeth into. They demand job satisfaction and the knowledge that they'll get somewhere if they've got what it takes.

In the light of this attitude on their part, why are they turning to other industries in such large numbers? A good part of the answer may be found in an article by Herrymon Maurer in the April, 1956, issue of *Fortune* magazine, in which he said:

> "The makeup of different industries has a marked effect on the distribution of college graduates. . . . Some industries, in their efforts to entice college talent, must combat deep-seated prejudices. . . . While some electric power companies are clamoring for engineers and paying going salaries, students seem to feel that the industry offers neither exciting professional jobs nor exciting future incomes."

Mr. Maurer's choice of the word "prejudice" is an accurate one. Webster defines prejudice as "an opinion or leaning adverse to anything without just grounds or before sufficient knowledge." The implication here is that the power industry does offer young men a challenging, exciting future, but for some reason the majority of graduates have chosen not to investigate the possibilities in that field.

It is important that we realize why the power industry appears outwardly unattractive to men that the industry needs, and that we come up with a means of correcting the situation.

Dr. J. E. Hobson, Director of the Stanford Research Institute, and Dr. W. A. Lewis, Dean of the Graduate School, Illinois Institute of Technology, delivered a paper at the 16th Annual American Power Conference three years ago. They reported that:

> "Engineering talent and manpower in the (power) industry have not been used as effectively as possible. Fewer young engineers are looking to the power field for careers. Electric power is, unfortunately, not attracting the imagination of the best creative and inventive young technical brains. Conversations with many young electrical engineers convince us that the lack of opportunity for creative work and the relatively low fundamental research vitality in the industry are important reasons."

The authors were convinced that there is a reasonable solution to this problem. They continued:

> "A central research laboratory devoted to the basic problems of electric energy conversion, storage, and transmission would most certainly attract competent young men, would assist in bringing creative brain power to the industry, and would provide an incentive to

hold this brain power to the industry. . . . The authors have explored these ideas informally with faculty members, graduate students and undergraduates of a dozen colleges and universities. The interest and enthusiasm expressed have been truly amazing. More aggressive research will bring new life, new vitality, new purpose, renewed interest, and keen brains to the industry as nothng else could do. Without an increase in research emphasis, attracting superior men to the industry will probably become more difficult."

Research and Development

There seems to be a feeling among engineering students and graduates that, with the exception of research and development in the field of atomic energy, the nation's electric utilities are not devoting much time, effort or money in fundamental research and development projects.

Of course, we in Edison Electric Institute realize that this is not an accurate picture. It is possibly true that some of our research and developmental work is not as spectacular and flamboyant as is the experimental laboratory in some other lines of industry.

But the many technical committees of Edison Electric Institute on the several phases of the industry, revolving primarily around the three general categories of generation, transmission and distribution of electric power, are concrete evidence of the electric utilities' efforts in developing better, safer and more efficient methods of doing things within the industry through research.

Our principal duty therefore, it seems to me, is to *impress the budding engineer with the many possibilities in the electric utility industry.* Since the research is not of the "revival" type, it therefore requires competent and continuous salesmanship in order to attract capable and energetic young men to this field of engineering.

Now there is nothing to indicate that the industry's rate of growth will slow down any, but quite the contrary, as evidenced by the prediction of a doubling of capacity and output each eight years instead of each 10.

New applications of electricity are continually being developed and placed in use. In the residential field alone, there are 15 appliances in use today which were in the experimental stage only 10 years ago. This list includes television, clothes dryers, dish washers, food freezers, room air conditioners, and quick recovery water heaters, to say nothing of the electric blanket and electric fry pan.

I read only the other day that the lowly can opener has gone modern. An electric can opener was a feature exhibit of the National Housewares Manufacturers Association at Atlantic City in July. It opens all sizes of can automatically, shuts itself off when the job is finished and even holds the detached top by a magnet until the can has been removed. I understand that these are now being retailed at something less than thirty dollars. Since the can has become such a vital part of the housewife's culinary art, doubtless numerous electric can openers will find places in the American home, as well as in the kitchens of the nation's hotels and restaurants. This is only one example. On the basis of past performance, we can expect an average of one and a half new electric appliances each year.

Atomic Horizon

We are presently looking forward to developments in the field of atomic energy. Just since 1954, when Congress permitted private enterprise to enter the nuclear energy field, 69 power companies have become active participants in experimenting in the use of nuclear energy as a source of boiler heat.

About the first of July of this year, an additional 13 companies banded together in a group known as Southwest Atomic Energy Associates, and they now have three additional companies on their list of applicants for membership in this association.

The program of these more than 80 companies is designed to test out the many possible ways of using nuclear energy in the generation of electricity to find out which is likely to give us the cheapest, most dependable and safest method.

Although present indications are that this method of boiler heating is not economically competitive with conventional fuels, particularly in my part of the country, it is certain that some day our supply of these fuels will become short. This, of course, is a long range planning project, for in Oklahoma alone, there are known coal reserves sufficient to satisfy the present requirements of the entire United States for over a hundred years.

Now, we are not the only ones developing and experimenting with atomic reactors. England and Russia, in particular, have been doing so for the past several years, and some newspaper stories would indicate that they are further advanced in this field than are we in the United States. It is difficult for me to place too much credence in such reports.

'Middle-Management' Men

Such advancement in conventional or experimental types of generation requires technical men. We are, therefore, not concerned with the ordinary run-of-the-mill employee. There is an adequate supply of clerks, groundmen, and other such types of workmen. Neither are we particularly concerned with what is commonly termed the "top brass." The men in this category have a background of the entire industry and are therefore replaceable only by others who have had many years of broad experience in the industry. The shortage with which we are most vitally concerned is that group which might be called "middle management." It embraces primarily engineers, but also includes expert accountants and auditors, sales executives, transportation experts, and the like.

So, engineers are in short supply, and this is one basic fact which we must recognize and correct. In the face of increasing need of and demand for engineers and scientists, there has been an actual decrease in the number of men (and women) graduating from our colleges in these fields since 1948. At the same time, it is claimed that the number of Russian graduates has increased.

Early in 1948, the United States graduated nearly 30,000 engineers; in 1955 only slightly over 20,000 engineers came out of our universities ready to go to work. On the other hand, Russia, in 1948, claims to have graduated slightly more than 30,000 engineers, with a master's or bachelor's degree or equivalent, while in 1955, 52,000 were graduated. In addition, some 80,000 were graduated

from technical institutes ranking somewhere between our high school and college levels. Actually, valid comparisons would be difficult because of varying curricula in the two countries.

It is estimated that at the end of 1954, there were 541,000 engineers in Soviet Russia and 650,000 in the United States. If the trend continues, the two countries would have virtually equal numbers in the near future.

Now, this attainment of scientific equality, in itself, is not particularly significant. The favorable or unfavorable comparison of Russia and the United States, however, in the production of either peacetime goods or war materials might have some impact on what other nations think of our form of government. And, of course, it is quite evident that scientific knowledge will be an important factor hereafter in determining volume and quality of the finished product.

Race Is On

It is, therefore, not immediately a race to equip armies or to stockpile weapons, but rather a contest in the development of engineers and scientists. Whether this can best be done by free men or by slave labor will be weighed in the balance.

There will, moreover, be an increasing necessity for scientific and engineering skills and techniques for our peacetime economy regardless of what Russia may be doing or plans to do.

The quality of the Russian engineer does not appear to be inferior to that of the United States graduate. As an example, the degree for the Russian engineer requires five years of 10 months each, six days a week, compared with the United States curriculum of four years of nine months each, five days a week.

It must be conceded, however, that quality of instruction, equipment and adaptability might easily require this additional time. The fact that the Russian engineer has been able to develop such things as the jet aircraft, fast naval vessel and synchrotron is impressive evidence of the brains and intellectual ability of the scientists in Russia working on Russian problems, whether they be Russian-born or not.

What are the reasons for the slowdown of college graduates in the field of engineering? These, I believe, are some of the more important:

Underestimation of the importance of technology immediately following the war. In May, 1949, the Federal Government published a bulletin entitled "Employment Outlook for Engineers," which contained the following excerpts:

> ". . . Any serious decline would possibly lead to unemployment in this branch of the profession.
>
> "Therefore, the field of mechanical engineering is expected to grow, . . . but the rate of increase will probably decline to some extent after a number of years.
>
> "Employment of electrical engineers in utility systems is expected to expand somewhat, but much less than production and capacity. . . . Most systems will, however, be able to construct and operate their additional capacity without a proportionate increase in their electrical engineering staffs.
>
> "In addition, a number of engineering graduates, even in periods of high business activity, fail to obtain engineering jobs."

It also contained this grossly erroneous prediction which was actually printed in italics:

> "In the next few years, approximately 1949 to 1952, the number of graduates will greatly exceed the demand for graduate engineers."

I believe the less said further on this subject, the better we will all feel.

Lack of trained teachers. The American Society for Engineering Education estimates that 1,300 more teachers were needed in our colleges to carry the 1956-57 teaching load than were available. Lewis Strauss has stated that between 250,000 and 400,000 high school students in America are being taught mathematics by teachers not trained to teach it and that the same situation prevails in the field of science.

Inadequate secondary school education. There is a serious decline in the number of students enrolling in science and math courses in high school, which would aid them in college engineering courses. The nation is worse off now in this respect than it was in 1900.

Misunderstanding of parents and students as respects the future of engineering. The opportunity and romance that engineering will afford in the next two decades has been grossly underestimated and understated. Such professions as law and medicine have been given a glamour through literature, radio, television and the theater. Although science is now receiving some popular publicity, it has a long way yet to come.

Our entire educational system seems to have flown off at a tangent with the so-called "progressive education" idea. This system, in the last analysis, seems merely to cut down the more brilliant student to the size and level of the mediocre student.

There is a keen competition among types of industry for engineers. The power industry is losing capable men, particularly in the field of petroleum engineering and chemical engineering. It is probable that we will have to adjust our pay scale in certain categories in order to attract capable men in the field of engineering and perhaps in a few other fields such as auditing, planning and transportation.

Permanent Correction Sought

Now just what can be done toward providing some permanent correction of this situation? Of course, we in the Edison Electric Institute have a committee consisting of the presidents of a number of electric power companies to study this matter and formulate a program.

One of its objectives is to seek ways of motivating capable students to study mathematics and science in high school, which would enable them to follow up with an engineering education and profession. Specifically, this group feels that the following suggestions would be helpful.

First, we must participate actively in school affairs at all levels. We must serve on boards; we must make sure that vocational guidance counsellors are available in high schools and, perhaps, grade schools as well. We must insist that, through aptitude tests early in life, candidates for the engineering profession be sifted out, as well as candidates for medicine, law and the like; and as a result, the student and society both will profit.

We must see that qualified students are encouraged, that qualified teachers are provided for them, and that attainment of satisfactory reward for

the extra effort they exert in mastering mathematics and science in place of some of the less demanding subjects can be theirs.

Next, we must try to improve the teachers' economic lot. We must realize that, in the final analysis, we are going to get just the kind of education for our children that we are willing to pay for. The average teacher's salary is approximately $3,800 a year. If we want our children to receive a top-flight education, we are certainly going to have to pay a more nearly top-flight salary to attract people capable of giving them a really adequate education in any field. This is a competitive society in which we live and although teaching is regarded as a semi-dedicated job, it is stretching the imagination to the breaking point to assume it is dedicated to this extent.

Some of us must reorient our thinking along the line of school taxes. It is actually in a class by itself for a number of reasons. First of all, it is generally a local tax, one which is spent in the immediate vicinity in which it is collected, and one the expenditures from which can be watched closely by those who provide the monies. It is a tax which is spent on our most precious possessions—our children—and therefore represents an investment in the future of America.

If we fail our children as respects education in order to save a few tax dollars, with all the other tax monies that are being spent at higher levels, much of it for purposes of questionable value and propriety, we are selling our posterity and our nation short.

Financial Aid Urged

We can maintain constant vigilance for young men and young women who would appear to have exceptional ability along such lines and give them encouragement and guidance and, where indicated, see that they get financial assistance. This can be done through many contacts, especially through observation of our young people in our churches, in our neighborhood, and in the schools in which we maintain continuing interest through alumni associations.

Many utilities have found that they are using engineers for purposes that are not strictly, and in some cases even remotely, an engineering function. It has been found that in many a job previously held by an engineer, a first-class clerk or junior accountant could handle the work equally well. By making such transfers, a qualified engineer has been released to do the experimental and vital work for which he was educated and trained rather than some mere routine although perhaps technical task which could very easily be done by other less critical types of personnel.

Many organizations are offering scholarships in technical and engineering schools for sons and daughters of their employees. This program in most organizations is in its experimental stages, but it is contemplated that it will in some small way help to alleviate the shortage of technically trained people, particularly in the field of engineering.

We can offer our own employees additional educational opportunities, both on and off the job, through company courses and through financial assistance to those men and women ambitious enough to take night courses to complete or supplement their education.

Cooperation As Solution?

We can give part-time summer jobs to qualified professors in our schools of engineering in the hope that such additional income, together with the customarily inadequate salary paid them by the schools, will encourage them to continue in their profession. That this problem is now generally recognized is pointed up by "Babson's Forecast" for July 15, in which he says: "Tremendous sums are wasted each year by companies competing for *able graduates* just out of college. Why wouldn't it be smarter for employers to *pool* this manpower source by forming a group which would offer *scholarships* on a *part-loan, part-gift* basis . . . with an agreement by the recipient that he will work for one of the group for a given number of years after graduation." This may not be the ultimate solution, but it does point up the fact that some concern over the situation is being expressed by others.

Finally, we have never been, as a nation, guided by intimidation but neither have we ever turned a deaf ear or a blind eye to the unmistakable sounds and signs which portend coming events.

We surely cannot disregard the tremendous advances being made by the Iron Curtain countries, particularly Russia, in the field of science and particularly nuclear energy experimentation.

Although it is difficult to distinguish fact from claim in many news items we read, the tangible results in the field of atomic energy, exemplified by jet aircraft and fast naval vessels which have actually been seen by the Western world, are positive testimony to Russia's substantial advancement in this field. We do not have to be alarmists to admit to ourselves that our team needs plenty of reserves to continue making those touchdowns.

A Review

In reviewing what I have said, may I emphasize:

1. The future well-being of our nation can well depend on its progress during the next one or two decades in the expansion of electric power, which in turn is a dependable barometer of the industrial activity, production facilities (both peacetime and war) and standard of living of any nation.
2. There is presently a shortage of engineers, technical men and other experts such as chemists and petroleum engineers.
3. Our present educational trend shows a decrease in number of engineers graduated, while Russia's crop of graduates appears to be steadily increasing.
4. To maintain our superiority will demand additional technically trained men.
5. This requires definite concerted action on the part of the businessmen and statesmen of this country to the end that a greater number of more capable teachers will be provided in both secondary schools and in the colleges and universities. The ways and means of doing this are many and varied. And finally, we must use every effort to steer capable young men and women into the study of science and mathematics with the conviction that this area presents the greatest need today, and that in this field they will be making the greatest possible contribution to their nation's preservation, safety and well-being.

Area Development's Link to Prosperity to Be Stressed at Fourth Workshop

AREA Development Produces Prosperity" has been selected as the theme of the Fourth Annual workshop of the EEI Area Development Committee to be held at the Phoenix Hotel in Lexington, Ky., Oct. 10-11. An organizational meeting of the committee will precede the Workshop on Oct. 9, it was announced by S. F. McGowan, Chairman of the Area Development Committee and director of Northern States Power Co.'s Area Development department.

The Workshop program, according to Harry W. Carloss, Kentucky Utilities Co., and Chairman of the Workshop, will feature talks by leaders in area and community development work, as well as workshops and panel discussions covering new activities in area development.

Held exclusively for electric company operating personnel, the workshop is planned to encourage a free exchange of ideas covering all phases of industrial and area development. Topics for discussion in this meeting were suggested by more than 100 utility personnel who attended the 1956 Workshop last October in Minneapolis.

Francis Pitkin, Director of Community Development, for the Pennsylvania Department of Commerce, will deliver the opening address on the morning of Thursday, Oct. 10. He will discuss "The Importance of Community Betterment to Industrial Development." In addition to his position with the Pennsylvania Commerce Department, Mr. Pitkin is vice chairman of the Pennsylvania Commission on Interstate Cooperation and holds other important posts on the State's commissions and boards.

"The Federal Highway Program and Its Influence on Area Development," a talk by Henry R. Radzkowski, Chief of Maintenance Branch, U. S. Bureau of Public Roads, and "Bankers Role in Area Development," by Oscar Monrad, vice president, The First National Bank & Trust Co., Oklahoma City, will round out the Thursday morning program. Mr. Radzkowski is a licensed professional civil engineer in the District of Columbia and a licensed lawyer in Massachusetts State Courts, District of Columbia Federal Courts, the Interstate Commerce Commission and the Federal Communications Commission. He has served as an engineer with the Bureau of Public Roads since 1928. Mr. Monrad is also vice president, treasurer and a director of Oklahoma Industries, Inc. and has had many years experience in industrial development work. A nationally known lecturer on the subject, he also has had numerous articles published in national business magazines.

Morrison, Joslin to Speak

The luncheon speakers on Thursday, Oct. 10 will be Herbert G. Morrison, Manager, Robert Driscoll Hotel, Corpus Christi, Texas, and E. J. Joslin, Vice President, Central Power & Light Co., Corpus Christi. Mr. Morrison who has been in the hotel business in Texas since 1927 became president and general manager of the Robert Driscoll in 1946. He is active in many community organizations. Mr. Joslin joined Central Power & Light in 1927 as cashier, rose to district manager of the Corpus Christi district and in 1956 was given full time duties in the Executive Department. He is active in civic affairs.

Three subjects will be discussed in six panel sessions to run concurrently on the afternoon of Oct. 10. Of particular interest to those whose work in this field is just beginning will be a two-part discussion of "Getting Started in Area Development." C. M. Fife, West Penn Power Co., will moderate Part I, and Robert Atkins, The Cleveland Electric Illuminating Co., will be in charge of Part II.

The sessions on "How to Co-ordinate Development Activities with Those of Other Agencies and Utility Companies" will be under the leadership of Horace Brewer, Consumers Power Co. (Part I), and Fred Ellis-ton, Texas Electric Service Co. (Part II).

"Developing New Prospects," the third subject for discussion at the panel sessions will be moderated by John Frederick, Wisconsin Power & Light Co. (Part I), and Robert Lee, The Connecticut Light & Power Co. (Part II).

The dinner speaker Thursday evening, Oct. 10, will be Irvin Farman, Executive Secretary of the Greater Fort Worth Planning Committee. A former feature writer for the Fort Worth *Star-Telegram*, Mr. Farman is a vice president of Witherspoon & Associates, Inc., a public relations firm.

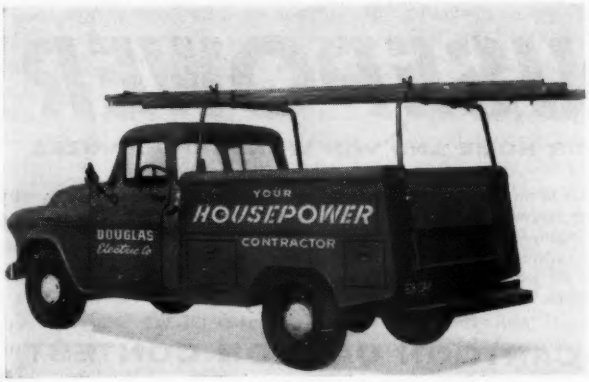
On Friday morning, Oct. 11, there will be a panel discussion on "Industrial Districts." The Small District will be reviewed by Floyd Fairman, Kentucky Utilities Co.; the Large Metropolitan District by Frank Sterns, Central Manufacturing District, Chicago, Ill., and Private Projects by Robert Ryan, Committee for Economic Development, New York City.

Dr. Dorothy A. Muncy, Consulting City Planner, Washington, D. C., at the luncheon meeting Oct. 11 will speak on "Protecting Industrial Land." A city planner and industrial geographer by training, Dr. Muncy is specializing in the new field of industrial land use planning. She holds a master's degree in city planning and a Ph.D. in regional planning. She currently is serving as a consultant to the Baltimore Regional Planning Council.

Closing remarks will be offered by Mr. McGowan.

Frederick Herr, Jr., Central and South West Corp., is Chairman of the Workshop Program Committee, and members are: H. D. Feltenstein, Jr., Central Illinois Light Co.; C. M. Fife, West Penn Power Co.; Robert P. Lee, The Connecticut Light & Power Co.; and C. P. Spellman, Virginia Electric and Power Co.

The Public and Advance Registration Committee has as its Chairman W. J. Jamieson, General Public Utilities Corp., and as members, A. V. K. Babcock, Arizona Public Service Co.; Robert H. Giedd, Florida Power Corp.; J. Eugene Johanson, Union Electric Co.; and O. C. Mayer, Idaho Power Co.



Two versions of specially designed HOUSEPOWER contractor trucks are offered by McCabe-Powers Auto Body Co., St. Louis.

The open type or enclosed truck features the HOUSEPOWER trademark on the side of the vehicle for easy identification.

1958 HOUSEPOWER Program Aims to Get Contractor in the Home

THE 1958 EEI HOUSEPOWER program, announced this month by E. O. George, Chairman of the EEI Wiring Promotion Committee and vice president of The Detroit Edison Co., is designed more than ever to get the contractor into the consumer's home.

A $100,000 consumer contest with cash awards of $10,000 will be launched Feb. 9, during National Electrical Week as a spearhead of this concerted consumer program. The advertising schedule, featuring an attention-getting cartoon caption advertisement will be published in the *Saturday Evening Post, Better Homes and Gardens* and *Sunset* magazines.

In addition to continuing mass education of the homemaker to the need for full HOUSEPOWER, the 1958 program has as its objectives: 1) coordination of industry cooperation to help continue this mass education; 2) creation of action patterns so that consumers can respond to the national advertising; 3) provide patterns for development of local programs by utilities; 4) helping the electrical contractor locate and sell full HOUSEPOWER installations.

Again the basic strategy of the program will consist of two big promotions—one in the Spring and another in the Fall.

Mr. George said the 1958 plans are part of the long-range objectives of helping to modernize the wiring in 20,000,000 homes. This, he says, can only be accomplished by providing wider consumer identification and lending greater support to the selling team—contractor, dealer and utility sales personnel through sales merchandising aids, the national advertising program and a training course on selling strategy.

Others Cooperate

Cooperating closely with EEI are allied electrical associations and manufacturers as well as other organizations. Carl T. Bremicker, Chairman of the National Wiring Bureau and vice president in charge of sales of Northern States Power Co., announced that Bureau's 1958 plans at a joint HOUSEPOWER-National Wiring Bureau press conference. Mr. Bremicker said the Bureau was working "hand in glove" with EEI HOUSEPOWER representatives.

To help the contractor get leads, the EEI HOUSEPOWER program will promote a "chain reaction" booklet, "The Inside Story on HOUSEPOWER," starting in September. Ads will announce the availability of the two-color, 20-page booklet to consumers. Readers fill in a coupon, enclose 10 cents for handling and postage and mail it to a central Post Office box. The coupon contains the name of the reader's utility and this is recorded and returned to the utility for local follow-up.

Included in the booklet will be a return post card, imprinted with the name of the utility in whose area the reader lives. The card says: "I am interested in a HOUSEPOWER Rating, please have a representative call."

"Thus two types of sales leads are generated by this 'chain reaction' offer," Mr. George said, "one initially by national ads and the second, an even better HOUSEPOWER prospect, through the card and booklet."

The booklet offer is to be made in ads in *Saturday Evening Post, Better Homes and Gardens* and *Sunset*.

These three publications also will be used in promoting the $100,000 consumer contest. A cartoon will illustrate a low HOUSEPOWER situation and entrants will write a caption for the cartoon in 15 words or less, using HOUSEPOWER in their statements. One half of the blank contains HOUSEPOWER information on the entrants' home electrical situation and the name of their electric utility companies. This half of the blank will be returned to the specific utility for use as a rewiring sales lead. Magazines to be used for this contest have a total circulation of more than 10,000,000.

Prizes, in addition to $10,000 in cash, are to include $90,000 worth of rewiring installations, major elec-

WIN 2 WAYS WITH HOUSEPOWER

THESE FACTS WILL HELP YOU IMPROVE YOUR HOME AND WIN WONDERFUL PRIZES

1 Today, 4 out of 5 homes suffer from low HOUSEPOWER (not enough electrical wiring, outlets, and switches). Your home may be one of the four. Here are some of the symptoms to look for: Fuses blow from time to time; lights dim or TV picture shrinks when an appliance goes on; appliances are slow heating up; "octopus" plugs and extension cords clutter your home. It's really easy to improve your home with *full* HOUSEPOWER. Just call your electrical contractor or electric company for a HOUSEPOWER Rating. If the rating indicates that additional wiring is needed, your electrical contractor can do the job quickly, neatly, economically. And *full* HOUSEPOWER will increase the value of your home.

$100,000 HOUSEPOWER CARTOON CAPTION CONTEST

WIN $5,000 CASH GRAND PRIZE

2 **Hundreds of Appliance Prizes (worth $50,000)**

It's easy! It's fun! Nothing to buy. **First, read the facts about HOUSEPOWER shown above.** Then write your cartoon caption, fill out the rest of the entry blank, mail it. And look at the prizes you may win:

$5,000 CASH—1st PRIZE
$2,500 CASH—2nd PRIZE
$1,500 CASH—3rd PRIZE
$1,000 CASH—4th PRIZE

PLUS 237 Valuable Electric Appliance Prizes:

5th-20th PRIZE . . . . . Washer-Dryer, Water Heater "package" plus rewiring job
21st-35th PRIZE . . . . . $250 rewiring job plus 1 major appliance
36th-75th PRIZE . . . . . Dishwashers
76th-105th PRIZE . . . . . Television Sets
106th-241st PRIZE . . . Handy Appliances: Vacuum Cleaners, Irons, Toasters, Frying Pans, Coffee Makers, Mixers, Blenders

Appliances donated by these famous-name manufacturers:

Write a Caption for this Cartoon!

To show you how easy it is, here are some sample captions:
"I told you to get the wiring checked, stupid!"
"But how can I get a midnight snack with low HOUSEPOWER?"
"No, it's not the recipe. This appliance is just slow heating up."
See how simple it is! Write your caption in the coupon below and mail it today!

CONTEST RULES

WHO MAY ENTER: Any user of electricity in their place of residence in the continental U.S. or Hawaii except employees (and their immediate families) of Electric Power Companies, Electric Leagues and Associations, their Advertising and Contest Agencies.

DURATION OF CONTEST: Contest begins Feb. 1, 1958. Entries must be received no later than April 15, 1958.

Multiple entries will be accepted, provided an Official Entry Blank is used each time. Entry blanks may be obtained from local Electric Power Company.

HOW TO ENTER: Read carefully the facts about HOUSEPOWER shown above. Then complete entry blank below. **Fill in your name and address twice.** Mail entry blank to "HOUSEPOWER CONTEST," P. O. Box 1888, Grand Central Station, New York 17, N. Y.

JUDGING: Judging will be based on the degree of interest, aptness, originality, and sincerity of the caption.

Winners will be notified by mail approximately 6 weeks from closing of contest. Only one prize per household. Grand prize winner will be notified approximately 10 weeks from final closing date. Winners' lists may be obtained by enclosing a self-addressed, stamped envelope with your entry.

Contest is subject to federal, state, and local regulations. All entries become the property of Edison Electric Institute. Judges' decisions are final.

Each contestant consents and agrees that neither the sponsors of this contest, nor the Contest Division of Richard Manville Research, nor any of their respective employees, will incur any legal liability for any negligence, error, act, or failure to act in the sponsoring or conducting of this contest or the handling, or judging, of any contestant's entry, however, all due caution will be exercised to prevent the occurrence of any such errors.

FILL IN BOTH PARTS OF THIS FORM

OFFICIAL ENTRY BLANK.
Mail to: P. O. Box 1888, New York 17, N. Y.
Fill in both entry blanks

WRITE YOUR CAPTION HERE _____

NAME (print) _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Place a check in the square following the correct information about your home's wiring system (this information found inside your fuse or circuit breaker box):

Number of fuses: 4 or fewer ☐ 5-7 ☐ 8 or more ☐
Amperes: 30 ☐ 60 ☐ 100 ☐
Age of my home is _____ years.

NAME (print) _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
YOUR UTILITY COMPANY _____

Your electrical industries sponsoring

HOUSEPOWER
TRADE MARK

The Spring phase of the EEI 1958 HOUSEPOWER promotion will get under way in February with this advertisement announcing a $100,000 consumer contest. The full-page ad will appear in the *Saturday Evening Post* on Feb. 15, and also will appear in *Better Homes and Gardens* and *Sunset* magazines. The contestant will write a caption for the cartoon and send the entry blank to a post office box in New York. The bottom of the entry blanks contain information about HOUSEPOWER in the contestant's home and can be used as leads for rewiring customers. First prize in the contest is $5,000 in cash.

trical appliances and hundreds of smaller appliances. To insure the success of the contest at local level, EEI will provide a complete kit of materials to be available well in advance of the kick-off date. Elements of the kit include a broadside, with space for local imprint, a contest window banner, mats of the contest rules and entry blank and glossy photographs of the cartoon for local newspaper or direct mail use.

There also will be detailed suggestions for publicizing the contest prize donors, and other ideas.

Mr. George said the benefits of this contest "can be limitless if it is put to work at the local level." He added that its objectives "tie right into our basic long range objectives for HOUSEPOWER 1958."

The contest objectives are: 1) to stimulate and encourage readership of the HOUSEPOWER message, thus educating the consumer on the various aspects of HOUSEPOWER; 2) to spur the consumer to take a specific action; 3) to provide usable and practical leads for local followup; 4) to offer a flexible promotional idea that can be adapted easily in all local areas and incorporated in any local program.

Forum to Continue

The HOUSEPOWER Forum, prepared by EEI in cooperation with the National Electrical Contractors' Association, and presenting the latest sales approaches and techniques, will be continued in 1958. Mr. George urged that utilities continue to sponsor the Forum. He said the Forum and its basic sales techniques can "still be a powerful tool when communicated to the hundreds or thousands of electrical contractors who have not yet been given the opportunity to take advantage of this selling aid."

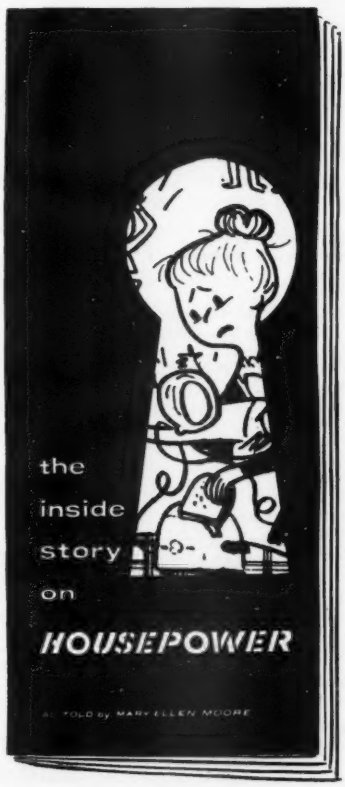
As a result of the HOUSEPOWER program, a number of truck manufacturers have been approached to determine the possibility of designing a special HOUSEPOWER contractor's service truck.

Mr. Bremicker, speaking for the National Wiring Bureau, said: "We immediately recognized the well-rounded and complete consumer program of EEI HOUSEPOWER . . . and recognized that, although there was little we could add to it, there was a job to be done in communicating the benefits of the program to two vital members of the residential wiring program — the electrical contractor and the home builder."

The Bureau, he added, will run advertisements telling all contractors what some contractors have experienced by putting HOUSEPOWER to work; how the profits in home wiring modernization are available if they will only "step up and sell the market."

Contractor ads will be carried in *Qualified Contractor* and *Electrical Construction & Maintenance* and builder ads in *House & Home*, the *NAHB Journal of Building* and *Electricity in Building*.

NWB promotional materials include a catalog of HOUSEPOWER materials from which a complete HOUSEPOWER program can be built; a contractor campaign manual telling contractors what is available and how to use HOUSEPOWER materials to build his own profitable rewiring business; HOUSEPOWER promotion guide for the electrical contractor, designed to help him generate leads from consumers for HOUSEPOWER installations, and ad mats for contractor use in local newspapers. For utility use, there will be a detailed slide presentation on the use of HOUSEPOWER Rating Sheet and Proposal Estimate Form which should help to acquaint the contractor with the benefits of using a "door opener," as the Rating Sheet, and closing the sale with the one-call Estimate and Proposal Form.



This "chain reaction" consumer booklet will spark EEI's Fall phase of its HOUSEPOWER program. Booklet, sent to homeowners, will provide rewiring leads for electric utilities and contractors.

The Bureau also will prepare a special HOUSEPOWER Builder Folder to point up the opportunities in selling homes equipped with full HOUSEPOWER. In addition, it will provide ads and promotional material directed to educational groups.

In describing the impact HOUSEPOWER has made on the nation, Mr. George said that 16 months ago the word "HOUSEPOWER" was introduced to the American public and today the concept it conveys has grown to a point where it is now a household word. He quoted a survey showing 40 per cent of homeowners know what HOUSEPOWER is.

"Certainly in the electrical industry, it is now synonymous with adequate wiring," Mr. George continued, "and, more important, it has achieved real meaning at the grass roots level where wiring modernization becomes a reality in the form of rewired homes."

Sells Manufacturers' Products

Mr. George pointed out that "a recent check of electrical manufacturers shows the program has had tangible effects on the sale of their products."

He mentioned a large manufacturer which reported that "in 1956, in the face of a very sharp decline in housing starts, service entrance sales climbed to an all time high."

Another company reported: "For the last two years under study we have noticed a definite drop-off in 30-ampere and 60-ampere equipment and a tremendous increase in 100-ampere equipment, as well as 200-ampere." The manufacturer added: "Our volume is up more than 15 per cent in in spite of the fact that new home starts have been declining. This means rewiring of old homes."

The support of the HOUSEPOWER program from the electrical industry was described by Mr. George as "nothing short of amazing." In addition to the National Wiring Bureau, he cited also the National Electrical Contractors' Association and the National Association of Electrical Distributors for their complete support.

TABLE I—MULTIPLE PURPOSE PROJECTS BUILT OR UNDER CONSTRUCTION BY THE BUREAU OF RECLAMATION AND THE CORPS OF ENGINEERS IN THE UNITED STATES

States	Total Estimated Cost	Estimated Allocation to Power	KW Capacity	Cost Per KW		Per Cent of Cost Allocated to Power
				Total Cost	Allocation to Power	
Arkansas & Missouri	$ 365,453,000	$ 228,058,000	738,000	$495	$309	62.4
Arizona, California, Nevada	1,445,691,000	762,971,000	3,496,000	414	218	52.8
Alabama, Georgia, South Carolina	331,525,000	287,788,000	768,000	432	375	86.8
Florida	46,380,000	23,016,000	30,000	1,546	767	49.6
Idaho, Wyoming, Montana, Utah	813,407,000	385,984,000	1,135,000	717	340	47.5
Kentucky, Tennessee	394,266,000	227,610,000	725,000	544	314	57.7
No. Carolina, Virginia	100,490,000	75,978,000	218,000	461	349	75.6
Oklahoma, Texas	388,830,000	122,419,000	333,000	1,168	368	31.5
Nebraska & So. Dakota	653,728,000	331,999,000	1,022,000	639	325	50.7
North Dakota	294,000,000	126,240,000	400,000	735	316	42.9
Colorado	158,960,000	56,982,000	179,000	886	318	35.9
New Mexico	27,109,000	10,092,000	24,000	1,116	415	37.2
Oregon, Washington	1,942,624,000	1,111,917,000	6,206,000	313	179	57.2
Total U. S.	$6,962,464,000	$3,751,054,000	15,274,000	$456	$246	53.9

Source: House Hearings Public Works Appropriations 1958, Annual Report Chief of Engineers on Civil Works Activities, Annual Report Secretary of Interior, 1956.

Multiple Purpose Projects—53.9% Power

ELECTRIC power at all multiple purpose projects have their power marketed by the U. S. Department of the Interior. These projects were started with the pretense that navigation, flood control or irrigation were their primary functions. However, the tentative allocations to power, made by the U. S. Corps of Engineers and the Bureau of Reclamation, reveal that 53.9 per cent of the cost of these multiple purpose projects built or under construction by the Bureau of Reclamation and the Engineers, exclusive of TVA, is charged to power.

These projects are estimated to cost $6,962,464,000, of which $3,751,054,000 is assigned to power. The average cost per kw of the investment assigned to power is $246.

Projects in Oregon and Washington account for 28 per cent of the total cost of these U. S. projects and 30 per cent of the power investment. Fifty-seven per cent of the cost of these projects in Oregon and Washington is charged to power. However, the three largest dams built under construction by the Corps of Engineers in these states including McNary, Dalles and Chief Joseph, estimated to cost $695,000,000, have a power investment equal to 93 per cent of the total cost of these dams.

The dams built or being built in the eastern part of the United States have a particularly large amount charged to power. Those in Alabama, Georgia and South Carolina have 86.8 per cent of their total construction cost charged to power while those in North Carolina and Virginia have 75.6 per cent of their construction cost charged to power.

TABLE II—DAMS WHICH ARE HIGH COST POWER PROJECTS WITH $400 OR MORE PER KW ALLOCATED TO POWER

State	Dam	Cost Allocated to Power	KW Capacity	Allocation to Power Per KW
Arkansas	Dardanelle	$50,530,000	120,000	$421
Alabama & Georgia	Fort Gaines	68,205,100	130,000	525
Florida	Jim Woodruff	23,016,400	30,000	767
Georgia	Buford	35,891,800	86,000	417
Georgia & So. Carolina	Hartwell	89,161,100	198,000	450
Virginia	Philpott	6,851,000	14,000	489
Idaho	Albeni Falls	30,802,000	42,600	723
Montana & Wyoming	Fort Peck	57,200,000	85,000	673
Wyoming	Boysen	6,482,000	15,000	432
Utah	Flaming Gorge	51,662,000	100,000	517
Kentucky	Barkley	69,519,000	130,000	535
Tennessee	Cheatham	17,036,000	36,000	473
Oklahoma	Eufaula	42,096,500	90,000	467
Texas	McGee Bend	18,517,300	45,000	411
New Mexico	Rio Grande	10,092,000	24,300	415
South Dakota	Angostura	578,400	1,200	482
Oregon	Cougar	10,687,000	25,000	427
Oregon	Rogue River	8,261,000	16,000	516

TABLE III—DAMS WHICH HAVE MORE THAN 90 PER CENT OF THEIR COSTS ALLOCATED TO POWER

State	Dam	Total Cost	Cost Allocated to Power	Per Cent Total Cost Allocated to Power
Washington	Chief Joseph	$150,000,000	$150,000,000	100
Idaho	Albeni Falls	31,100,000	30,802,000	99.0
Georgia & So. Carolina	Hartwell	94,300,000	89,161,000	94.6
Arizona	Glen Canyon	298,354,000	281,114,000	94.2
Washington & Oregon	Dalles	260,000,000	237,936,000	91.5
Washington & Oregon	McNary	285,000,000	260,381,600	91.4
Georgia	Buford	39,364,000	35,891,000	91.2

Toward Effective Supervision

By W. O. Turner

President, Louisiana Power and Light Co.

An address before the 10th Annual Round Table Conference of the EEI Industrial Relations Committee, Chicago, Ill., Sept. 24, 1957

THIS matter of supervision is always of considerable interest, and frequent concern, to groups of practically all kinds, including industry, associations, political parties and governments. You will recall, for example, that both Hitler and Stalin had occasional differences of opinion with various of their supervisors with a resulting reassignment of responsibilities and sometimes a lopping off of heads. We of course call that sort of thing a purge. Their methods were perhaps a little on the rough side, but their intent was more effective supervision.

Only within the past few months we read in the press about a plan and program in Russia to cut down on the quantity of supervision, improve the quality, and thus eliminate some of their bureaucracy with the hope that they would achieve more effective supervision. They may have felt that this was necessary to increase the flow of consumer goods, or perhaps their worker morale was at an undesirable low. Whatever their reasons, they were trying to attain their purposes by means of greater supervisory control.

Their interpretation of supervision and ours, I feel quite sure, are quite far apart as well as the methods used in achieving and maintaining it.

You can have a supervisory structure that may look reasonably well on paper, but unless there is some individual incentive there is considerable doubt as to the ultimate effectiveness of that supervision.

Let me illustrate that by reminding you that this is the 350th anniversary of the founding of the Jamestown Settlement. From the time of the landing of the colonists on May 13 in 1607, until Captain John Smith took over directing the affairs, this group operated along the lines of a communistic doctrine. Everything was done for the good of the colony, presumably, and there was no reward for those who were exceptional, nor punishment for those who were lazy. The challenges and trials of this little group of men and women were too great to include an economic fiasco such as the communistic doctrine of everything for the common good. The lazy would not do their part of the work, and finally the industrious would not provide for the improvident. Food became short, and there was no protection against the Indians. Had not this economic philosophy been changed to one of reward and incentive for individual effort by Captain John Smith, it is doubtful if there would be anything to celebrate on this 350th anniversary, for the colony was well on its way out until that change was made.

The Cause of Greatness

That, I suppose, is one of the principal reasons why our country stands today as the greatest in history. It isn't because of a more generous share of the earth's natural resources. Other countries have those too, and in some instances, more than we. It isn't because we have more people to do a job. Russia, China, and India all have more than we. It isn't because we have a race strain superior to that in any other country for our people are representatives of races from all sections of the globe.

It must be then that these people are more than willing to use their energies, abilities and talents in the development of our resources, and in the exchange of goods to a high degree of efficiency because they as individuals will reap a reward in proportion to their knowledge and efforts used.

But, how does supervision tie in with this? Supervision is the formalized coordination of the energies and talents of these people directed at the exchange of goods, the availability of services, the production and use of resources to the greatest possible level of efficiency.

We certainly in the utility industry strive to make the best use that we know of peoples' talents and the resources available to us so as to do the best job possible. We here today have our thoughts directed toward more effective supervision in a utility company and primarily in electric utility companies. Business managed utility companies serve about 80 per cent of the entire electric utility industry, the rest is government in one form or another, city, state, or Federal. In any and every utility company making up this 80 per cent, all of our thoughts and all of our efforts are directed toward the good will of three groups of people. Some of the people may well be and as a matter of fact are in all three groups.

These groups are our stockholders who expect fair treatment from a standpoint of earnings, interest, and dividends; our customers who expect and demand good service at reasonable rates; our employees who expect and demand, good wages, good working conditions, and security in times of illness and old age.

If you keep all three of these groups pleased, you have a successful operation and if you don't you will sooner or later find strife and turmoil. I view the problem of the conduct of our business in these simple terms, simple in their statement, but sometimes rather complex in their attainment. We must at all times be rather adept at balancing on the tight rope, so to speak, or else one of the three groups may get out of balance.

Our efforts toward more effective supervision are knowingly or unknowingly directed toward maintaining this balance of groups and in one way or another working toward an improved position of the three of them.

Well, we manipulate our rates, our scales of pay, our dividends and for the moment we bring them into balance, so why not leave them that way. The answer is simple again, they won't stay that way. What's good today, isn't of necessity good tomorrow. We are a people that are constantly on the move, searching

always for better and better things.

One of the very best tools that we have for the improvement of ways and results in our business is supervision.

We constantly strive for good and effective supervision and in order to get it and after getting it make it more effective we have to in my opinion do certain things:

1. We must have sincerity of purpose.
2. We must pick good men.
3. We must train those men constantly.
4. We must keep them informed and be certain that they keep those under them informed. In other words we must communicate.

Belief Is Necessary

I don't believe that anyone can do his very best, unless he sincerely believes in what he is doing. In our business we must believe that the three groups are equally deserving of your fair consideration and you must resolve matters equitably between them. You must really want to work for the benefit of the stockholders, the public, and the employees. If you pass this test then you are ready to take step two toward more effective supervision.

You must choose good men. I don't believe that there is anyone here who would argue against this point. When you choose a man today you choose one that you firmly believe is able to handle today's problems. But what of the supervisors that we chose last year, five years ago, and twenty years ago. That is why point number three is so important.

I don't propose to tell you how to select your supervisors, what processes or criteria to use, or what standards to set up. I would like to urge though that we all give this matter of supervisory selection the most serious thought possible as the future of our industry will depend on how good a job we do in that respect.

We must train our supervisors constantly.

Why do we want and need more effective supervision?

Not only are our businesses much more complex today than they were even a few short years ago, but the industry and company problems in the way of achievement of goals are much more involved. This means that a higher quality of supervision is absolutely necessary today than it was a few years ago, and you can't change supervisors every year or so.

During the last 10 years we have had customer growth of between 40 and 50 per cent.

During the next 10 years there is every reason to believe that the continued growth will approach this figure.

During the last 10 years we have seen the capacity of turbines in our new generating stations increase in size and complexity.

During the next 10 years this trend will no doubt continue with accent on atomic generation.

During the past 10 years we have seen the acceptance of mechanized equipment of all kinds, such as that being used for transmission construction and maintenance, distribution and rights-of-way maintenance.

During the next 10 years there will be even greater emphasis on these efficient labor saving media.

Two-way radio, microwave, industrial television, and many other similar developments were uncommon or unavailable 10 years ago. Today they are commonplace. Tomorrow they may be supplanted by even greater improvements.

These all point up the need for more effective supervision and the need for better training for our supervisory forces.

I believe the companies in our industry recognize this, and each in its individual way is attempting to improve this situation.

Goals Before Technique

Yet, I can't help but lean toward the opinion that we sometimes become so engrossed in techniques that we lose sight of our goals and objectives. I don't mean to criticize or discredit techniques, but they should always remain in a supporting role to our industry and company objectives.

But where we may overdo on techniques, we frequently underdo on not using the help that is available. At the end of 1956, there were 253,100 employees in the electric utility industry. If we assume that approximately 10 per cent of these were supervisors, we have over 25,000 in that category. In addition to supervisors, there are others in what we may call an influence group such as engineering personnel, sales personnel, administrative personnel, etc., who are not actually supervisors.

What are we doing to help these supervisors and members of the influence group to do a more creditable job in carrying on their work through the other employees?

I am sure you will agree with me that more effective supervision will achieve many things. You may be thinking primarily of the changes that would result in labor relations or employee relations with more effective supervision. That is true, of course. But it goes much further. A good supervisor is aware of his responsibilities in all respects. He wants to get the job done on time, efficiently and properly. He wants to keep his costs as low as he can consistent with other requirements. He is interested in his company maintaining a good sound financial position. He is more than willing to do his part in developing and maintaining a high level of community and employee relations.

How to Reduce Problems

And, if all of our supervisors had that attitude, we would have a lot less problems in our industry today than we have.

I believe we may say with reasonable assurance that in the evolution of our companies some people were put into supervisory jobs who were perhaps qualified at that time but who have not kept pace with the rapid growth and development during the past few years. We have them, and we all know, of course, that we're going to keep them. So, the best thing for us to do is to take a little more pains and have a little more patience with them to improve their supervisory conduct. It's worth the effort.

Then, of course, we have the other type of supervisor who is able to grow with the job and who is alert to most problems. He will make mistakes occasionally, but all in all, does a reasonably good job. These will usually respond quite readily to suggestions we may make, information we may pass on to them or expressed goals and objectives.

We're bringing into this so-called influence group people every day from whom we hope to have a high level of supervisory performance. Some of these are new to our companies brought in as professional members. Others are promoted from

various categories into the influence group. How well and how wisely are we selecting these people and later how well will we continue to train them? Whether for good or bad our industry has a reputation of going to almost any length to keep from hurting one of our people by dismissal or downgrading. If we promote a person into the supervisory ranks, he usually stays there. If we made a mistake in selection, that mistake will stay with us for many, many years.

I suppose as we grow older in years and point of service we develop a reluctance to shove responsibility off on the younger members of our company. I can't figure out to save me why we should take that position. We had responsibility shoved on us when we were all younger and it didn't seem to hurt us. If we are going to properly handle our growth problems, our technical problems, our people problems we are going to have to be more aggressive in encouraging our younger supervisory people to carry increasing amounts of responsibility. They will make mistakes, of course. That is to be expected. We did too. But they will learn lessons that they won't be able to get any other way.

The accident prevention men are developing some programs this year around the thought that "Knowing Is Not Enough." The thought behind this, of course, is that supervisors, as well as those whom they supervise, know what to do and how to do it to keep from having accidents, but that alone is not enough. That must be translated into favorable action.

Room for Improvement

This same philosophy may be applied to any area of supervision. I firmly believe that our supervisors know their jobs and know how to do them. But I feel equally as strong that our supervisors are not doing as good a job as they know how to do in passing on to others the knowledge and information they have that are part of better, more efficient supervision.

I don't think that I should take up your time here today telling you the things that a supervisor needs to do and to know to be more effective. You know that he needs to know his job, and he must know and understand his people and how to get along with them recognizing their talents and abilities, as well as their weaknesses. You know that he has quite a responsibility in selecting them properly and training them after he gets them so that both he and they will be happy.

Having selected and determined to train our supervisors we then come to point 4 on the list of things to do. We must communicate.

But where does all of this discussion on "effective supervision" bring us? In my opinion it's very simple. It's just a matter of properly and effectively telling our story and being understood. That's all that is necessary. That is all it takes to improve the quality of supervision; to achieve better employee relations with a corresponding improvement in production; to have a more sympathetic customer and public group toward our industry and its problems. Communications most people call it. Like the weather, we do a lot of talking about it, but too often our efforts are in the token or lip service category.

A Matter of Facts

I've been in this business for many years. During that time I have come to the conclusion that a group of men and women whether they be employees or customers will respond fairly and effectively if the facts in a situation are presented to them thoroughly and in the proper manner, and usually when they do not respond properly it's because they didn't know or understand. Whose fault is that?

Let's give this slightly reverse twist to illustrate why we frequently do not get desired results. Suppose your company is holding a meeting or series of meetings today to explain a new employee-benefit program to your supervisors. And, suppose you, as most companies do, expect your supervisors to pass this information on to their employees. All well and good. That's as it should be. But remember that only part of the original story gets through to the supervisor. Some soak up more than others, of course. When these supervisors start passing this same information on to their people they will not be as effective in their communications as you were because they won't know as much about it to start with. So, how much then does the employee get exposed to and how much does he soak up? Only a fraction of what you started with in the first place.

Let's take this one step further. I believe you will agree with me that the opinion of an employee's wife toward his job and his company has a great deal to do with his occupational happiness known as morale. Now, if he has absorbed very little of the story you presented to his supervisor, how intelligently can he talk about it to his wife?

Benefits, Operations, Industry

I used a change in your employee benefit program in this illustration. It could just as easily have been something related to operations or industry—company problems.

We cannot have effective supervision until we have effective communications.

I believe we can boil this down to two phases of selection and communications.

In the first phase of selection I mean choosing new employees in our industry. Considering both turnover and growth requirements most companies here today will employ during the next 10 years as many employees as you presently have. The importance of proper selection becomes obvious.

The second phase of selection has to do with choosing supervisors from among your non-supervisory people and also choosing from among your present supervisors qualified people for greater responsibilities. Let me inject a thought here that may seem trite or even corny—but so true! When we have gone through the selection process to make a man a supervisor or promote him from one supervisory job to another, let's give him not only the responsibility of the new job but the authority that goes with it, plus one more ingredient. Let's give him our confidence and encouragement. How can we expect him to move along the road of effective supervision if he is lacking in adequate authority to do his assigned tasks and does not feel that he has the confidence of his own supervisor? He will either turn sour or go to seed and will carry his people with him.

Communications — let me empha-

(*Continued on page* 320)

Oklahoma Editor Pays Tribute to Paul Hoheisel

By Walter M. Harrison*
Editor, The North Star, *Oklahoma City, Okla.*

AS the man dragged his crippled body toward the dais to receive the award it struck me that here is a fine example for thousands of high school graduates who will listen to speeches of high emprise this week.

The man was Paul Hoheisel, advertising and publicity manager for OG&E. (Oklahoma Gas and Electric Co.) The stage was the regular meeting of the Ad Club. The award was a copper plaque. The honor was his selection as "advertising man of the year." And it couldn't happen to a more deserving guy.

Brains, Loyalty, Imagination

No public utility in the southwest has a better relationship with its customers than OG&E. Without detracting an iota from the consistently excellent top management of the electric company, we give Hoheisel credit for much of its public acceptence. For his company he has accomplished an outstanding job with brains and loyalty and imagination.

For more than 20 years he has found the time to help every civic cause he has been called upon to serve. To name a few recent jobs: Public information, Cowboy Hall of Fame; Public information, St. Anthony hospital fund raising success; Public relations, Society for the Prevention of Blindness; for years moderator of the weekly television program for the Oklahoma Medical Research Foundation.

Nor has he neglected his own professional outside organizations. Presently he heads the Oklahoma Utilities Association. He is a past president of the Oklahoma City Advertising Club, past district chairman of the Public Utilities Advertising Association, and past national chairman of the Electric Companies Public Information program.

His activities suggest that he has the constitution of a bull moose. On the contrary he has wrestled with arthritis for years. His physical handicaps would have prompted a weak soul to withdraw from public activities and conserve his pain-wracked body. But not Paul. He never has shied from a task because of his difficulty and he wouldn't thank me one bit for calling him handicapped.

Moreover his company is sought by all who know him. He is a mine of wit and humor. He can spin yarns of his rough boyhood for hours and never repeat. He has a homely story for every situation and few have a better command of English and a better sense of timing in charge of public meetings.

To read of his accomplishments, to read his clever column in the company house organ, or to hear him speak you would assume that he had all the privileges of the best education money can buy. But he had minimal school help, accomplished the balance with his bare hands and natural facilities.

We shall document this statement only by recalling that Paul's father and brother were killed in a mine accident in Colorado when Paul was 15 years old. Then his schooling stopped. He went into the mines as a breadwinner and began clawing his way along.

From Overalls to Advertising

Hoheisel joined OG&E in the construction element, in an overalls job. Then to stores, to appliance sales, to the advertising job and the top place in that section in 1943, which he has graced and expanded every succeeding year. He is two years from retirement. My guess is that he will carry on in this community for years as a wheelhorse in every civic activity, long after he has done his full measure of public service and more.

The other day a handsome young man of 18 came to see me. He was pretty bitter because he could not go to college. He has a fine body, a fine mind and considerable ability. It is too bad that he cannot go to college. But that is a common misfortune. Such should read the story of Paul Hoheisel carefully. Go to work. Improve yourself. Be grateful for health and strength and the freedom of America which gives every brain an equal chance.

You will find it more rewarding than you think.

PAUL HOHEISEL

*This tribute to Paul Hoheisel, advertising manager of Oklahoma Gas and Electric Co., Oklahoma City, appeared in a recent "This Is the Skipper" column of The Oklahoma City *North Star*, by Walter M. Harrison, editor of the publication. Mr. Harrison was for two years president of the American Association of Editors and is now a charter member of that organization. He has just completed his second term on the City Council of Oklahoma City, and was for years managing editor of *The Daily Oklahoman* and the *Oklahoma City Times*.

Witney Study Analyzes Collective Bargaining

AN analysis of what collective bargaining has become in American economy is presented by Prof. Fred Witney in *The Collective Bargaining Agreement: Its Negotiation* and *Administration* to be published in September by the Bureau of Business Research, School of Business, Indiana University.

This study sheds light on the many facets of the collective bargaining process. It points up the nature of the collective bargaining problems, the negotiation on the labor contract and the administration of labor agreements.

Priced at $1.75 for the paper-covered and $2.75 for the cloth-covered volume, the study is in five chapters: 1. Trends in Labor Relations; 2. Wage Problems Under Collective Bargaining; 3. Nonwage Issues; 4. At the Bargaining Table, and 5. Administration of the Agreement.

Developing Morale and Loyalty

By C. Herald Campbell
Personnel Director, Pacific Power & Light Co.

An address before the 10th Annual Round Table Conference of the EEI Industrial Relations Committee, Chicago, Ill., Sept. 23, 1957

WE live in a world of controversy. I was, therefore, not really prepared to discover that there are two ideas on which there is almost unanimous agreement. These ideas are involved in the meanings of the words morale and loyalty. I find that writers and speakers, with rare frankness, explain morale as a set of conditions and relationships that have an indefinable quality. This is very revealing. When it comes to loyalty, the most common definition seems to be that loyalty is something that cannot be bought. I presume this also makes it indefinable.

Now this is not really very specific, so we must find a better definition of two principal words in the topic. What do we mean by loyalty and morale?

Loyalty we can accept as the end product of good morale—the cheerful and willing acceptance of a management's orders and expressed objectives as being in the best interests of all concerned individually and collectively.

Morale we can define as an attitude of emotional readiness which enables the worker to turn out more and better work without increased fatigue; which causes him to enter enthusiastically into the activities and endeavors of the group with which he works; and which makes him less susceptible to outside influences, especially those which base their appeal on the premise that management's sole interest in him is to get all it can and give as little as possible in return.

Morale is purely emotional in that it has to do entirely with how the worker feels about his job, his supervisor, and his company, rather than with the actual facts; yet the creating and maintaining of a high degree of morale in the group under his supervision is probably an executive's principal responsibility. Somebody has pointed out very effectively you can buy eight hours of a man's time on the job, but, and this is most important, loyalty and morale cannot be bought or ordered or reasoned or even persuaded into existence. It can be created only by introducing into the work situation of each member of the group certain conditions which are favorable to its development and no person in the organization plays a larger part in this than the employee's direct supervisor.

In talking about loyalty and morale, we are really involving ourselves in the problems of motivation of human beings in a work situation. Management's major motivational objective is to establish the conditions under which the work force will produce the largest amount of good work on a sustained basis at the lowest possible cost. We live in a country and a civilization which has exalted the natural sciences and to a degree we are a nation of engineers. Hence our managements often fail to appreciate the nature and magnitude of the differences between manipulating things and managing men.

Changes in Motivation

Great changes have occurred in the past 25 years in our ways of thinking about what motivates people to work. Let us take, for example, the widely held notion that people at work are primarily motivated by economic interest and that in their pursuit of economic gain they are essentially logical. Wherever and whenever this assumption has been seriously investigated in the light of the facts, its universal validity has been shown to be questionable. Far from being the prime and sole mover of human activity in business, economic interest is far down the list of incentives that make men willing to work.

Lyndall F. Urwick has challenged the assumption that the relationship between employer and employee is or can be exclusively economic. He challenges the theory that men will work for money alone as being so palpably false that it is extraordinary that it should persist. Pointing out that our generation has seen millions of the best young men of this country lay down their lives for an idea; that it has witnessed six to eight classes of West Point graduates virtually wiped out on Korean hillsides—not in defense of the United States, but for what we all believe is the way of freedom, Mr. Urwick poses this question:

"Can we then tell each other that the survivors of these struggles, when they come back to our plants and offices, will only work for money? Surely there was never a greater blasphemy against the human spirit!"

He says, of course we can tell them that the correct way to behave in business is to make their own personal advantage the primary consideration in their lives, but the best of these men won't accept that. They will demand an ideal, a purpose in life which comes closer to touching what they know is best in them.

Challenges Mr. Urwick:

"How many of us know even one man who would die for a check, however large?"

Nevertheless, the belief in economic motivation lingers in many areas. Without such an assumption, the modern scene remains inexplicable to many people. The behavior of some union leaders as well as that of some management leaders helps perpetuate this notion. Yet close scrutiny of the situation at the social level reveals the symptomatic character of the so-called acquisitiveness of modern man. It was a union leader, Clinton S. Golden, who suggested that people join unions as much because of feelings of frustration and the desire for sociability as the desire for economic gain.

Almost a quarter of a century ago, Elton Mayo suggested that the problem was not so much "the sickness of an acquisitive society" as the "acquisitiveness of a sick society." People at work who are "activated primarily by motives of self interest

logically elaborated are few in number," said Mayo. "They have relapsed upon self interest (only) when social associations have failed them."

Although it would be incorrect to say that this over-simplified version of the economic motivation of people at work has been completely discarded, nevertheless another theory has sprung up in the last 25 years with which it has at least had to compete. According to this view, people at work, executives as well as the rank and file, are not too different from people in many other walks of life. Whether they work at the top, the middle, or the bottom of an organization, they are not entirely creatures of logic; they, too, have feelings. For example, they like to be praised rather than blamed. They do not like to have to admit their mistakes—at least not publicly. They like to feel important and to have their work recognized as important. They like to feel secure and independent in their relations with their superiors. Moreover, they like to express their feelings. They like to be listened to and have their feelings and points of view taken into account. They like to be consulted about and to participate in the making of any changes which will affect them personally. In short, they, too, like to belong—to be an integral part of some group.

Social and Economic Man

It should not be hard to recognize, then, that man at work is a social creature as well as an "economic man." He has personal and social as well as economic needs. Work provides him with a way of life as well as a means of livelihood. To understand his satisfactions and dissatisfactions at work, one must understand the social as well as the physical and economic setting in which his work takes place. One must understand the kinds of relationships he has developed or can develop with his bosses, his subordinates, and his co-workers, as well as with other people and groups in the organization.

The recognition that business organization has a social as well as a logical structure throws considerable light upon the satisfactions and dissatisfactions of people at work. It also throws light upon the necessary preconditions for the development of morale and loyalty. Far from being a matter of logical and technical contrivance, morale and loyalty are much more the products of relationships involving feeling and sentiment.

Four Morale Factors

Drs. Rensis Likert and Daniel Katz of the Survey Research Center at the University of Michigan have been carrying on a long term research program on employee productivity and morale. Part of their study was carried on in a public utility and they found four factors relatively independent of each other which were important for morale: (1) Size of work group, (2) Recency of promotion, (3) Type of work, and (4) Supervision.

In general, they found that the larger the work group the lower the morale, even when other factors such as type of work were held constant.

They found that morale was higher among people recently promoted than among those who had made no progress in the company for some time.

As other studies have indicated, they also found that type of work is related to morale. Blue collar workers tend to have lower morale than white collar workers. The more monotonous the work the poorer the morale; the more technical, the more specialized, the more varied the work, the higher the morale.

Likert and Katz found that another factor of great importance to morale is supervision. Certain kinds of supervision produce high morale; other kinds of supervision produce low morale. In the first place, the good supervisor is one who can create a feeling of real participation on the part of his workers. Employees having good morale say, for example, that their supervisor asks their opinion and is open minded to suggestions; that he holds discussions with them in which they are given a chance to express their own ideas, or share in reaching a decision. Another difference was that the good supervisor praises people more than he criticizes them.

Likert and Katz also found that high morale people say, for example, that their supervisor goes to bat for them, that he stands up for them, and thus they have a feeling of security in their jobs. This feeling is developed because the supervisor is reasonable in what he expects the workers under his supervision to do. The better supervisor is a good judge of people. He is fair and impartial in dealing with them. He is good at handling people. He has praiseworthy traits, such as an even temper and patience. He is available to his subordinates and ready to offer help on the job whenever they need it. He lets them know what he expects of them, what he thinks of their work, and how they are doing it.

Among the large national organizations, Sears, Roebuck & Co. has achieved an enviable reputation for not only the effectiveness of its operation but the morale of its organization. Undoubtedly this achievement is due in part to the research that organization has undertaken in the field of employee attitudes and morale and the development of sound personnel policies and practices under the leadership of James C. Worthy.

Writing in the *Harvard Business Review*, Mr. Worthy reported on the underlying factors influencing employee morale developed from surveys they had conducted over a period of twelve years covering several hundred different company units and over 100,000 employees. Sears has not only used questionnaires to determine employee attitudes and opinions, but has followed up by means of personal interviews among employees of those departments and areas that are indicated as containing dissatisfaction problems.

Contributing Factors

Among the conclusions that the Sears organization has reached is this very important one, that there is no simple explanation for any given state of employee morale. Their studies indicate the existence of a highly complex set of interdependent factors which combine in subtle and obscure ways to produce a particular level of employee satisfaction or dissatisfaction. Whether high or low, this level of satisfaction, in turn, seems to reinforce many of the factors producing it, thus setting in motion a kind of circular reaction which tends to keep good morale good and poor morale poor. It is for this reason, says Mr.

Worthy, that management despite sincere and vigorous efforts finds it so difficult to bring about perceptible improvements in problem situations.

The Sears studies indicate that many of the factors considered of primary importance by management often play relatively minor roles in employee morale. For instance, pay ranked in eighth place among elements related to high morale. Interestingly enough, this eighth place item related to pay in comparison with other jobs in the same unit; rates of pay as such ranked in 14th place.

Not by Pay Alone

This is not to say that rates of pay, hours of work, and proper job differentials are not important. Wherever local management is guilty of any serious shortcomings in these matters, Sears has found that they loom up much more importantly in employee thinking. The point is these things in themselves are not enough. They are only the beginning. If the only basis management can conceive for employee loyalty and cooperation is the pay envelope and the short work week, there can never be enough money or short enough hours to do the job. Management must have a firmer basis than this to build effective working relationships.

The role played by conditions of work is likewise often misunderstood. Good equipment, pleasant and attractive surroundings, well maintained wash rooms, etc., can never of themselves develop high morale. Their absence, however, can be a source of real difficulty. If employees are discontented with any phase of their relationship with management, they are likely to seize upon and magnify any inconveniences arising from their physical surroundings. Where annoyances are apparently unnecessary, employees are likely to interpret the condition as evidence of management's lack of concern for them as people. It is against this attitude that employees rebel. Poor working conditions are merely evidence of management's attitude and a convenient target against which to direct complaints.

The importance of management's own attitude toward its employees is likewise demonstrated in the matter of employee benefits. Sears has had a very broad and substantial program in this area and has found that this framework of employee benefits has had a definite influence on employee attitudes. This influence, however, has been more indirect than direct. Important as the economic aspects of the benefits may be, their chief significance as regards to employee morale is the fact that they are tangible evidence to the organization of management's concern for the welfare of its employees.

The Sears study shows clearly that employees respond primarily to the evidence of management's concern and only secondarily to the economic values as such. Worthy pointed out that in those companies where good morale pre-existed, the introduction of benefit plans produced a favorable response because they were an additional expression of the management attitude to which employees were accustomed and in which they had confidence. In those cases where morale was poor, however, the benefit plans were received with suspicion and distrust and as probable evidence that management was trying to pull some kind of fast trick.

Can't Buy Loyalty

Too many managements try to find an easy way to improve their employee relations through generous wage scales, liberal employee benefits, attractive working conditions, etc. They have sought to buy the loyalty and good will of their employees and thus avoid facing up to the shortcomings on their own part which may be at the root of employee unrest with which they profess to be concerned. Such managements have been kidding themselves in believing that provision of generous fringe benefits truly represents "an investment in employee good will." Although there is ample evidence that these expenditures represent material additions to employee well-being, there is equally ample evidence of many cases where such investments have not produced much return in the form of employee good will — the ostensible purpose for which the investment was presumably made.

The theory on which such managements have operated has been that employees will appreciate management's generosity and their gratitude would be conducive to improved morale, higher productivity, etc. Actually if the management in the way it introduces the benefit plan or in the way it talks about it creates the impression that it expects appreciation, the reaction of employees is likely to be exactly the opposite to what management expects.

Technical, Symbolic Aspects

Every action of management, just as every action of an individual, has two aspects—one technical and the other symbolic. The technical aspect is the objective nature of the action. The symbolic aspect is the meaning imputed to the action. Every action of management is evaluated by employees in both its technical and symbolic aspects: What is it? And what does it mean? This applies not only to formal policies such as employee benefit plans, but to every aspect of management behavior and every contact between management and employees.

People cannot live or work together in any kind of continuing relationship without each party to the relationship knowing pretty well the attitude of the other. This applies in the home as well as in the work place. The husband and wife cannot disguise for long their feelings for each other. Nor many parents and children, nor managers and employees. Try as one may to hide or disguise one's real feelings, they will reveal themselves in one manner or another; the other party will not be fooled for long.

In intimate relations such as these overt behavior is always closely evaluated in terms of motives. One husband brings his wife a beautiful bouquet of flowers which she accepts as a further expression of the love and devotion he holds for her. Another husband brings his wife an equally beautiful bouquet which causes her to wonder what he has been up to now. It's not the beauty nor the cost of the bouquet which is important but what it means—and the wife generally has a pretty good idea on that score as does the husband in interpreting his wife's behavior toward him.

There is obviously no easy way to improve employee morale and develop

loyalty. Basically the problem is a moral and an ethical one. Attempts to deal with it by other means without facing up to this fact are sterile. The important point in the situation is management's attitudes toward its people. Identical benefit plans installed in companies with and without a good management attitude are likely to have precisely opposite effects.

Turning to further determinants of industrial morale, Worthy points out that quality of supervision is an important factor but that the type of supervision prevailing in any organization is likely to follow closely the pattern set by those in the top levels of management.

He points out that it has become the fashion in management circles to ascribe much of the blame for poor employee relations to "inadequate supervision" and to attempt to improve matters through supervisory training. He points out that in many cases the supervisor himself is the victim of poor handling by his own superior or he may be caught in a network of management policies and practices which are largely responsible for his own attitudes and behavior.

Top Level Coordination Needed

Any effort to bring pressure on him to change his behavior without first dealing with the forces which are determining his behavior is likely to backfire. This is even more likely to occur when, as frequently happens, training programs are installed at the lower supervisory levels without any corresponding attention to the need of improving the skills of executives higher up the line.

In talking about employee morale, we would do well not to overlook the fact that managers are people, too, and managers are employees also. Hence, the effect of the supervisor's own morale upon the employee he supervises cannot be over emphasized. In his day to day contacts with his subordinates, the supervisor may exhibit an attitude of indifference toward management, defensiveness against management, or even outright aggression against "them," depending on the degree to which his morale has been depressed. On the other hand, a high morale supervisor will exhibit active interest, active participation, and even active selling of the company, its service, and its supervision.

To a very real degree, the attitudes and the morale of those supervised will soon inescapably reflect the feelings of the first line supervisors. Where the morale of first line supervision is lowered, the organization can do little toward the formation of positive feelings in the nonsupervisory employees; in fact, the company may unwittingly contribute in a large measure in a formation of negative feeling in the rank and file.

Promotion from Within

Promotion from within is found by Worthy to be a strong determinant of good employee morale. This finding is qualified by the proviso that the management pattern be one of excellent leadership skills. If higher executives tend to maintain friendly, easy, comfortable relations with those who report to them directly, these individuals in turn will tend to maintain similar relations with their own subordinates down through all levels of the organization.

If this is the situation which prevails, executives who rise from the ranks are likely to have a better appreciation of the employee's point of view and promotions from within will increase the respect and the confidence of employees for their superiors because of their knowledge that those in higher positions really know their jobs and won their spurs in free and open competition. Furthermore they are all in the family, and all speak the same language, because in a sense they all grew up together as part of the same organization. Thus, there tends to be a higher sense of the "we" feeling than is likely to be the case otherwise.

Two Needs Served

As with most sound management policies, promotion from within serves two sets of needs—those of management and those of employees. The management needs qualified people to fill responsible executive positions. The employee with ability needs to find an opportunity to develop and exercise that ability. All employees need to feel that they are a part of an organization in which ability is recognized and rewarded. This latter need is an outgrowth of one of the most deeply rooted sentiments of the American democratic tradition—the American ideal of freedom of opportunity with ability finding its own level and a man advancing as far as his capacity and ambition will carry him.

Paralleling the findings of Likert and Katz, Sears surveys reveal that there is probably no more important influence on attitudes and morale than the sheer size of organization. Worthy reports that their study shows clearly the tendency for morale to decline sharply with increasing size, even though the same personnel and management policies are applied. The reason for this is fairly clear.

Employees in smaller units have a much better opportunity to know each other so that cooperation between individuals and departments can develop on a more personal and informal basis and not be so largely dependent on impersonal systems and administrative controls. Employees can see much more readily where they themselves fit into the organization and the significance of their jobs in the whole scheme of things.

'Flesh and Blood' People

In a smaller organization supervisors and executives are in frequent personal contact with employees, so that to the rank and file they appear as flesh and blood people who can be liked and disliked for their own sakes and not judged solely on the impersonal results of their administrative actions or on the basis of myths about "those guys in the front office."

Further important advantage of smaller organizations lies in the fact that this closer, more frequent, more personal contact between executives and the rank and file makes possible a much better understanding of each other's problems and points of view and greatly facilitates the adjustment of any difficulties which may arise.

Mr. Worthy says that their studies suggest that the important factor in securing small organization is not so much geographical dispersion as administrative decentralization. The Sears system is very highly decentralized and the local manager has authority and responsibility within himself for the day to day decisions

which are of greatest moment in employee relations. He is subject only to a general framework of company policies; within that framework he has adequate leeway for handling on the spot practically all problems which may arise. For this reason, he finds it easier to win the respect of his employees. He is in a position to exercise the kind of effective leadership which would be impossible for an executive whose own higher management had so little confidence in him that allowed him only a narrow leeway of judgment and discretion.

The point to be stressed is administrative decentralization, the placing of authority and responsibility as close as possible to the scene of action and permitting a wide range of discretion to those at each level of the system. Many organizations assume that they have such decentralization, but the form and the fact may be two different things. The mere issuance of an official policy cannot bring about decentralization if higher executives persist in reviewing or making decisions which should properly be made further down the line or if they set up rigid controls which allow too little leeway for those at the scene of operations. Worthy states that the essence of decentralization is an attitude of mind, the willingness on the part of those at higher levels of authority to permit their subordinates an adequately broad range of discretion.

Over-Specialization Discouraged

Along with administrative decentralization, Sears has discouraged over-specialization of function within their organization to get away from the disadvantages of over-specialization of individual jobs. The company has found that over-functionalization carries with it serious liabilities. For one thing, it brings together in one place large numbers of employees on the same job level and where the job level is low, as it is in many cases, this concentration makes the organization much more vulnerable to personnel difficulties than would be the case if such jobs were scattered among several departments representing a greater variety of activities and job levels.

More importantly, from the standpoint of the individual employee, over-functionalization destroys the meaning of the job. The worker may be involved in a highly specialized task which has meaning to management, but he cannot see the total process. He sees only the very small and uninteresting part to which he and his fellows are assigned. In a real sense, therefore, the job loses its meaning for the employee—the meaning, that is, in all terms except the pay envelope. Consequently, employees have little feeling of responsibility for tasks to which they are assigned. The requisite close and constant supervision required in this type of organization makes it impossible to achieve cooperation spontaneously.

Burden of Over-Functionalization

The administration of organizations which have been over-functionalized to the extent characteristic of many organizations today imposes a severe burden on the top administrative group and a specialized staff becomes necessary to help them carry the load.

This growth of staff activities complicates the situation still further because the inevitable consequence is the elaboration of formal controls of various kinds to permit the staff to perform the functions and exercise the responsibilities which are delegated to it or which it gradually assumes in an effort to strengthen its position and extend its authority. The result is the gradual undermining of the line organization for the benefit of the staff, the impairment of flexibility and adaptability and weakening of the effectiveness of the entire organization. Mr. Worthy's studies suggest that factors such as these that have been enumerated are in many ways the root cause of poor employee morale in broad sections of American business and that until they are corrected no substantial improvement in either employee relations or productive efficiency is likely to be possible.

In conclusion, Worthy points out that the problem of employee morale is far more complex than is customarily appreciated. There are no simple cause and effect relationships and often the influences of primary importance are subtle and obscure.

The quality of personnel relations prevailing in any organization and the level of employee morale and loyalty is not a matter of chance but is profoundly influenced by a simple and relatively informal organization structure which not only permits but enforces the maximum of informal face to face relationships and keeps impersonal institutionalized relationships at a minimum. This type of structure likewise provides a high degree of freedom on the job, utilizes a larger measure of the individual's capacities, requires the exercise of personal judgement and initiative, and encourages the development of native abilities.

Such a system requires an unusually high order of administrative ability if it is to operate successfully. In essence, such a system is a democratic system and democratic leadership requires far higher skills than the authoritarian variety.

Basic to all other factors is the attitude of top management itself toward the people who comprise its organization. The nature of this attitude will largely determine the structure of the organization and the quality of relationships that prevails within the structure.

High employee morale is a by-product of sound organization. It is not a result that can be achieved by and for itself; above all it is not a result of "being nice to people" or plying them with favors. Nor is high morale something to be achieved at the expense of good operating results. The same policies, attitudes, and practices which are best calculated to produce good operating results over the long run are precisely the policies, attitudes, and practices which produce high levels of employee morale.

Brothers: Good Morale, Results

Good morale and good results are not mutually exclusive. They are two aspects of the same thing: Sound organization and capable leadership.

We are all identified with an industry peculiarly vulnerable to and subject to attack from without. We must recognize that not all the misconceptions about business are the result of propaganda spread by subversive or leftist organizations and individuals. Many of them—and much of the criticism toward business—stem from religious, spiritual

(*Continued on page* 320)

Congressional Legislative Actions in 1957 Relating to Nuclear Power Development

DURING the first session of the 85th Congress, the House and Senate acted on several bills relating to the development of nuclear power. Four bills, which were enacted into law, appeared to be of particular interest to electric utilities; these include the reactor indemnity bill, the bill requiring specific congressional authorization for appropriation of funds in the atomic power program, the bill authorizing appropriations for the Atomic Energy Commission, and the AEC Appropriations Bill. The principal features of these bills, along with certain background information, are described below.

Extracts from Majority Report (House Report 978) Accompanying Bill Authorizing AEC Appropriations

"The inadequacies and gaps in the present program (in line with the AEC policy of delegating program initiative to private industry) are attributable in part to the lack of any realistic long-range (or short-range) planning by the Commission in the reactor fields."

* * * *

"In view of these basic differences of function and size it is apparent to the committee that the need for advancing the small or intermediate reactor art should be the AEC's primary interest and negotiations with cooperatives and publicly owned organizations should take into consideration basic differences in their size, financial structures, and capacity for participation."

* * * *

"Unless the United States accelerates its atomic prototype development, it could lose its leadership. The reactors proposed by the committee in the current authorization bill represent only a very modest or minimum program to help fill the gaps in the AEC program."

Extracts from Majority Report (House Report 978) Accompanying Bill Authorizing AEC Appropriations

"When all of these amendments are gathered into one place, the main purpose they serve becomes obvious. Separated and scattered throughout the authorization bill, they appear to be no more than regular projects in the bill. Together they are, in an even more objectionable form, the substance of the Gore-Holifield bill of last year. While the Gore-Holifield bill provided general lines for the acceleration of the atomic energy reactor program, this bill would set forth specific projects which section 110 (a) would make it mandatory that the Commission build. This does not even leave it to the discretion of the Commission to fit the statutory requirements into the program of the Commission—technically, administratively or legally. This is public power advocacy run rampant."

Indemnity Legislation

During the early part of 1956 it was brought to the attention of the Joint Committee on Atomic Energy that the problem of possible liability in connection with the operation of nuclear reactors was a major deterrent to further industrial participation in nuclear power development. The Joint Committee held hearings on this problem in May and June of 1956 and subsequently reported out an indemnity bill. This bill, however, did not come up for debate on the floor of either house.

In January, 1957, the bill reported the previous year, with certain Committee amendments, was reintroduced and referred to the Joint Committee on Atomic Energy. The bill was considered at hearings in March and in executive session in April. On May 9 the Joint Committee reported a so-called "clean bill" (S-2051, Senate Report 296; HR-7383, House Report 435) which contained a number of amendments to the bill introduced earlier in the session.

Among the principal provisions of the bill as finally adopted are the following:

1. Licenses and construction permits under certain provisions of the Atomic Energy Act of 1954 (including those for construction and operation of nuclear power plants) may have as a condition of the license a requirement that the licensee have and maintain financial protection of such type and in such amounts as the AEC shall require to cover public liability claims.
2. The amount of financial protection required shall be the amount of liability insurance available from private sources, although the AEC may establish a lesser amount, considering such matters as the cost and terms of private insurance; type, size and location of the licensed activity and other factors pertaining to the hazard; and the nature and purpose of the licensed activity. Owners of nuclear plants having a rated capacity of 100,000 kw (electric) or more are required to obtain the maximum amount of financial protection available from private sources.
3. The AEC, with respect to licenses issued during the period August 30, 1954 to August 1, 1967, for which it requires financial protection, shall agree to indemnify and hold harmless the licensee and other persons indemnified from public liability arising from nuclear incidents which is in excess of the level of financial protection required of the licensee. The aggregate indemnity for all persons indemnified in connection with each nuclear incident shall not exceed $500,000,000 including the reasonable costs of investigating claims and defending suits for damage.
4. The fee for such indemnification shall be $30 per year per 1000 kilowatts of thermal energy capacity for facilities licensed under section 103 of the Atomic Energy Act of 1954 (Commercial Licenses). For licenses issued under section 104 (which includes those for reactors of a research and development nature), and for construction per-

mits, the AEC is authorized to reduce the fee in accordance with certain designated considerations. A minimum fee of $100 per year was established.

5. An Advisory Committee on Reactor Safeguards was established to review safety studies and facility license applications referred to it, and to advise the Commission with regard to the hazards of proposed or existing reactor facilities and the adequacy of proposed reactor safety standards. This committee is required to review all applications for licenses for nuclear power reactors.
6. The AEC is required to hold hearings on each application for a nuclear power reactor license after a 30-day public notice of such action.

Legislation Requiring Specific Congressional Authorization for Appropriation of Funds for the Atomic Energy Program

Prior to the passage of this legislation, the AEC had a blanket authorization under section 261 of the Atomic Energy Act of 1954 for appropriation of funds to carry out the provisions of the Act with the exception of funds to acquire, construct or expand AEC facilities. Under that authorization, the AEC submitted its program directly to the Appropriations Committees with the exception of that portion pertaining to facility acquisition, construction or expansion which had to be submitted to the Joint Committee, and subsequently the Congress for approval before being referred to the Appropriations Committees.

As a result, requests for a substantial portion of funds for the Civilian Atomic Power Program, in which the Joint Committee has a particular interest, were not subject to annual Joint Committee review.

For some time there had been concern both within and without the Joint Committee over the extent of the review which the Joint Committee and the Congress should give each year to the AEC budget, particularly as to the Civilian Atomic Power Program.

Some of the members of the Joint Committee felt that all government financed experimental reactors except very small ones should be authorized as facilities under section 261 prior to construction, and also that cooperative arrangements whereby the AEC provides government funds for assistance to industry in the development and construction of reactors (such as under the Power Demonstration Reactor Program) should be scrutinized more carefully.

Also the Chairman of the House Committee on Appropriations had been particularly critical of the authorization procedures and interpretations of the Atomic Energy Act followed by the AEC in previous years. In a floor statement on April 16, 1957, he indicated that he believed appropriations would not be warranted by the House Committee on Appropriations and the Congress until the Joint Committee on Atomic Energy had reviewed the entire AEC atomic power program as part of the authorization process.

In June the Joint Committee on Atomic Energy reported a bill (S-2243, Senate Report 437; HR-7992, House Report 571) to provide increased congressional control over the Civilian Atomic Power Program and other purposes. This bill was passed by the Senate on June 19, the House on June 24, and signed into law on July 3.

The principal provisions of the bill as enacted into law are as follows:

1. Specific congressional authorization is required for funds for any non-military experimental reactor designed to produce more than 10,000 thermal kilowatts of heat.
2. Specific congressional authorization is required for funds to carry out cooperative programs (such as the Power Demonstration Reactor Program) involving payment of funds, rendering of services, undertaking of research and development without full reimbursement, waiver of charges, or other financial assistance.
3. The AEC is required to submit any fair price or guaranteed fair price period, or any criteria for the waiver of any charge for the use of specific nuclear material to the Joint Committee, and a period of 45 days shall elapse while Congress is in session before such can be established. The Joint Committee may waive the conditions of any or all of any portion of such 45-day period.

Legislation Authorizing Appropriations for the AEC

In March of this year a bill to authorize the appropriation of funds for AEC facility acquisition, construction, or expansion was introduced and referred to the Joint Committee on Atomic Energy. The bill was referred in turn to the Joint Committee's Subcommittee on Legislation. This subcommittee considered the bill in executive session on April 10 and 16, and conducted open hearings during nine days over the period June 12 through June 27. It should be pointed out that consideration of this bill was generally concurrent with that of the bill to provide increased congressional control over the Civilian Atomic Power Program, as described above. With the signing into law of this bill on July 3, it became necessary for the Joint Committee on Atomic Energy and the Congress to approve the authorization of funds for the Civilian Atomic Power Program.

The Subcommittee on Legislation drafted a modified bill and reported it to the full committee on July 23 by a party-line vote, as several provisions written into the bill were of a controversial nature. The Joint Committee reported the bill, also by a split vote, on August 23. (S-2674, Senate Report 791; HR-8996, House Report 978).

House Report 978 included both majority and minority views, the latter of which were signed by all four Republican House members on the Joint Committee.

A selected extract from the Majority Report, in addition to those shown in box, is as follows:

> "The Joint Committee over the years has not been satisfied that the AEC has been making sufficient progress in the development of prototype power reactors to test and demonstrate the practical problems of achieving economic nuclear power."

Selected extracts from the Minority Report, in addition to those in box, are as follows:

> "In general, we feel that the modifications will result in expensive and unnecessary Government reactor construction, involving the expenditure of $58,000,000, neither requested by the Atomic Energy Commission nor approved by the Bureau of the Budget. They are designed to promote the growth of

public power and to hinder development of atomic power by our traditional resources of private industry."

* * * *

" . . . The result is that under this bill the encouragement which was given to private industry by the Atomic Energy Act of 1954 to begin entering the atomic energy field in cooperation with the Government is now almost completely wiped out."

On August 9 the House passed the bill after adopting certain amendments. The Senate passed the bill as reported by the Joint Committee with no amendments, on August 16 and the bill was sent to conference. On August 20 the conference report was issued and the compromise bill subsequently passed by both House and Senate and signed into law.

The principal items of controversy in the bill reported out by the Joint Committee, along with actions by the House and Senate on the respective items, are set forth below.

1. That AEC be authorized and directed to construct a natural uranium gas-cooled graphite moderated reactor of approximately 40,000 kw electric capacity; $40,000,000. Reactor to be located at an AEC installation with electric energy used by AEC.

   House adopted an amendment 211-188 to delete this authorization. Senate retained the authorization. Bill as enacted authorized $3,000,000 for development, design, and engineering only, and did not authorize reactor to be constructed.
2. That AEC be authorized and directed to construct a plutonium recycle experimental reactor, 15,000 kw; $15,000,000; to be located at an AEC installation with electric energy used by AEC.

   House adopted an amendment 211-188 to delete this authorization. Senate retained this authorization in Bill 42-34. Bill as enacted authorized funds and directed construction of this reactor.
3. That AEC be authorized $3,000,000 to prepare a design for a large-scale single or dual purpose reactor for the production of special nuclear materials, said design to be presented to the Joint Committee on Atomic Energy by April 1, 1958.

   The House defeated by a vote of 201-197 an amendment to delete this from the bill. The Senate also left the provision in the bill. As finally enacted, this provision is in the bill.
4. That AEC contract directly with manufacturers for the construction of reactors proposed by a public power district under the 1st Round of the Power Demonstration Reactor Program, and three cooperatives and one municipal under the 2nd Round. AEC to sell steam to respective participants at costs not to exceed those of comparable steam from plants using conventional fuels at such locations.

   House adopted amendment 213-185 deleting this provision. Senate retained this provision by a vote of 42-34. Bill as enacted limits this provision to reactors proposed under the 2nd Round of the Power Demonstration Reactor Program. Bill also calls for sale or dismantling of these reactors at the end of research and development period which is in no event to exceed 10 years.
5. The bill did not contain the authorization of $4,206,000 requested by the AEC to fulfill its contract with the Power Reactor Development Company. The following extract pertaining to this is quoted from the Majority Report (House Report 978) accompanying the Authorization Bill. "The committee does not approve the requested authorization for pre-construction research and development work and waiver of fuel-use charges in connection with the reactor project of the Power Reactor Development Company, since legal proceedings before the AEC to determine the probable safety of the proposed reactor are still pending."

   The bill, however, did authorize $1.5 million for research and development on the fast breeder reactor generally, but the inference was that these funds could not be used for research and development for PRDC.

   The House voted 211 to 188 authorizing $1.5 million for the PRDC project during fiscal year 1958. The Senate rejected a similar authorization 34-42. The bill as enacted made it possible for the AEC to expend the $1.5 million on research and development for the PRDC reactor.

An extract from a Statement by President Eisenhower which accompanied the signing of the bill into law is quoted below.

" . . . While I am not opposed to such projects as studies by the Commission, I wish to make it clear that I will oppose the expenditure of public money for the construction and operation by the government of any large-scale power reactor or any prototype thereof, unless private enterprise has first received reasonable opportunity to bear or share the cost. . . ."

AEC Appropriation Bill

In the bill appropriating funds for the AEC HR 9379, the $30,000,000 approved in the authorization bill for carrying out the 3rd Round of the Power Demonstration Reactor Program was disallowed by the House Committee on Appropriations, as was the $1.5 million authorized for research and development for the PRDC reactor. The House Committee on Appropriations, however, included $1.5 million in other funds to be used for advancing fast breeder reactor technology.

The House by floor amendment instated the $30,000,000 for the 3rd Round Power Demonstration Reactor Program. The Senate also voted this in its version of the bill. As finally enacted, the bill provided 1.5 million for the advancement of fast breeder reactor technology, which, it appears, may be expended by the AEC, if it so desires, on research and development work connected with the PRDC reactor.

As a sequel to the AEC Authorization and Appropriations Bills, at a hearing of the Subcommittee on Legislation of the Joint Committee on Atomic Energy on Sept. 17, it was reported that the manufacturer scheduled to construct the Elk River cooperative reactor was asking for a $3,000,000 increase over its previous ceiling price of $8,136,000. The manufacturer scheduled to construct the Wolverine Cooperative project had previously withdrawn its original estimate of $5,472,000 and has now estimated the project will cost $14,436,000.

Training and Development of Employees

By D. A. Bartlett

Director of Industrial Relations, Western Massachusetts Electric Co.

An address before the 10th Annual Round Table Conference of the EEI Industrial Relations Committee, Chicago, Ill., Sept. 23, 1957

MOST of us would probably agree with a statement made by Peter Drucker: "The success and ultimately the survival of every business, large or small, depends in the last analysis on its ability to develop people." Drucker expanded this statement with a further thought, "Increasingly from here on this ability to develop people will have to be systemized by management as a major conscious activity and responsibility."

Drucker's second statement has less the sound of a truism than the first; however, I believe it merits the same degree of accord from us, provided we do not interpret the second statement as implying that development can, by systematization, be eliminated from the responsibility of every member of management as an individual.

As with many other industrial relations functions, it is often thought that employee development is "a job for the personnel people." Sometimes this view reflects an undue respect for the industrial relations staff. More often, I suspect, the willingness of the line of organization to abdicate responsibility for management functions in the area of industrial relations, including employee development, is symptomatic of a feeling shared by many line executives that industrial relations functions are less important, less urgent or less interesting than other management functions such as production, distribution, sales and sales promotion.

Status of Development

If we accept Drucker's first statement, it seems clear that employee development (along with the other congenital concerns of an industrial relations staff) must be recognized as being a primary and continuous concern of all members of the line management organization as individuals to be carried out by these individuals within the framework of systematized programs and techniques which these individuals established with the advice and assistance of the industrial relations staff.

As is true of most management functions, there is no single formula for employee development. The precise programs and techniques which will prove suitable and effective for one company will almost certainly not be identically applicable to another company. For this reason, it would be presumptuous and a waste of your time for me either to detail for you how my company seeks to develop its employees or to prescribe for you what I think is the best way to carry out this function.

The Needs and Goals

Because of the enormous scope of the function of employee development in industry, I will not try to discuss it exhaustively. What I would like to do is to consider with you something of the needs for and the goals of employee development and to discuss some of the settings in which any program for employee development operates.

Let us first consider what we mean by employee *development*. Many definitions have been formulated. For example:

> "... the process of aiding employees to gain effectiveness in their present or future work through the development of appropriate habits of thought and action, skills, knowledge and attitudes.
>
> "The continuous, systematic development among all levels of employees of that knowledge and those skills and attitudes which contribute to their welfare and that of the company."

May we say that the development of an employee within his employment environment is his growth in ability, productivity and capacity for responsibility.

It is clear that individuals will grow in varying amounts and at different rates in each of these respects —ability, productivity and capacity for responsibility. Some may not grow at all in more than one of them. It is a good thing that there is such variety in extent and rate and kind of growth because most industrial employment environments require a great variety of people in a great variety of jobs—from janitors and common labor to highly specialized engineers to experienced skilled craftsmen to wise and responsible top management executives, to mention a very few.

Many factors affect the rate, extent and kind of development which will take place in employees. Superficially considered, "training" is often assumed to be the single most influential planned sequence of actions taken to develop employees. By training I mean any explicit process of instruction of limited time duration and having a distinct, concrete objective. As a process, training is a much more specific and a narrower one than development. The difference between training and development, as I shall use the terms, is implicit in the following statement made by Galileo: "You cannot teach a man anything, you can only help him to find it within himself."

Development and Training

Development occurs through a process of helping people find things within themselves. Training is one narrow technique within the broader process of development. Galileo's statement implies that what can be achieved by training is much less than what is included in development. The same implication and a further suggestion of the limitation in the training process is contained in the following quotation from novelist Aldous Huxley's *Antic Hay*. "Until all teachers are geniuses and enthusiasts, nobody will learn anything but what he teaches himself."

Let us digress for a moment longer on the subject of "training." Unless we accept a common denominator as to its meaning and objective, how can we set up a sound program? Train-

ing is not telling people what to do, showing them how to do something, assigning them to work with other employees with greater skill and experience, or assuming that experience, by virtue of time alone, is a training medium. Training is the passing along of "know-how" through carefully selected methods, according to a sound pre-conceived plan, by competent and well grounded people, in a favorable learning environment to shorten learning time and experience. Further, it is telling, showing, plus supervised practice until the desired change is achieved in the learner's skill, attitude, or behavior.

So much for the "what" of development. Now let us consider "why" employee development should be a primary concern of industrial management. This I take to be almost self-evident.

Management Personnel Outlook

I have alluded to the great variety of jobs to be found in any industrial enterprise. If the more responsible of these jobs are to be filled from within the personnel population of the enterprise (and this seems to be increasingly necessary as well as desirable), it is obvious that people must develop in their occupational environment. If the newly hired common laborer, meter reader, clerical employee or other starting-job incumbent is to progress into jobs requiring more ability, efficiency or responsibility, he must grow in these qualities. The need for first-rate management personnel from company board chairmen and presidents to first line foremen and supervisors is going to be constantly before us for the foreseeable future. The growth which marks America is an all-pervasive force. Our growing population is producing a continuously increasing demand for goods and services. The production of these goods and the furnishing of these services, i.e., our growing gross national product, requires an industrial function which is growing in size and complexity and, automation notwithstanding, will require more and more well developed personnel.

Let us again dwell on the question of "Is training a must?" If yours is a company that never uses new materials, never changes policies or procedures, never adds new jobs or realigns duties, never promotes from within, never transfers personnel, has all the skilled people it needs, has a topnotch sales force, can hire directly the right type of personnel from the local labor market, and a few others that you can probably think of, you will probably conclude that training is not a "must." But, I don't believe that any of us experience these conditions, and so I will state emphatically that we cannot afford to not train.

Such then is the "why" of employee development in terms of industry's future personnel requirements.

There is an equally insistent need for development of employees from the standpoint of the employees. People need and want to grow as individuals. They crave prestige, increasing responsibility, increasing income, and other benefits. If the opportunity for such growth to occur in tomorrow's jobs is not felt by employees in the jobs they hold today, they will not perform today's jobs well or happily. From this it becomes apparent that industry has a constant contemporary interest in seeing to it that the employee's need as a person to develop is fulfilled.

Perhaps what I have said so far seems too obvious to have bothered to say it. If so, I am glad, for it means that our consideration of the elements of a systematic program of employee development proceeds from the same point of departure.

Recruiting and Employment

Employee development starts with the personnel recruiting practices of any industrial enterprise. The kind of persons who apply for employment will to a very large extent depend on the recruiting program. The character of applicants will limit the choice available in hiring, and it seems clear that hiring practices delimit the potential in any program of employee development.

Remember Galileo's statement—"You cannot teach a man anything; you can only help him to find it within himself."

Recruiting and hiring are the processes whereby the personnel raw material is obtained today to be developed (by means including training) to become the foremen, supervisors, technicians and executives of tomorrow.

The main point which I wish to leave with you is that employee development starts with these processes. Much that has been written about development neglects to recognize this fact, and I suspect that much of our activity in the field of development fails to take sufficient account of this fact.

With particular reference to recruiting, a further observation seems pertinent and significant. And this is that the public relations practices (including advertising and sales promotion) of a company will help determine the response to its recruiting practices. I have seen no studies on the relationship between public relations practices and recruiting results, but I have observed this relationship in practice as I am sure you have also.

'Selection for Hire'

Hiring an employee is the culmination of a series of steps which we may term "selection for hire." Without extended discussion, I will list what seems to me a number of the more important elements of the process of selection for hire.

Selection for hire:

Interviewing, including home interview.
Testing.
Checking physical fitness.
Checking references.
Checking motivation for employment.
Checking comprehension of job requirements.
Checking comprehension of opportunities for progress.
Checking fit with opportunities for progress.
Verifying facts on application form.

Selection for hire is a crucial moment. Not only will effective hiring cut down break-in periods and tend to reduce turnover, it will also maximize the potential of any development program.

I suggest that you investigate the use of the patterned interview entitled "Tested Technique of Personnel Selection" as produced by Robert N. McMurry for the Dartnell Corp. While this plan is excellent, there are undoubtedly other plans that produce equally good results, but I am only familiar with this particular one and not competent to comment on others.

The next processes to be considered as part of the development program are induction and the probationary period. Induction and the probationary period serve both the employer

and the employee as processes for correcting, or, if necessary, undoing the mistakes which may have been made in recruiting, selection for hire and initial job placement. It is almost inevitable for there to be differences between the *talk* in the recruiting and hiring processes (both the talk of the employer and that of the job applicant) and the *facts* of employment. The pre-employment impressions of both parties are often belied by post-employment experience. Induction and the probationary period should be utilized to adjust for unfulfilled expectations.

Room for Improvement

It is my impression, taking industry as a whole, that there is more room for improvement in the handling of our people in the induction and probationary processes than any other phase of their careers. These processes should properly be viewed as the gestation and infancy of the occupational life of industrial employees, and as such they merit more care and attention than we generally give them. Experiences in induction and the probationary period form the sometimes indelible first impressions and arouse the frequently permanent expectations or resentments which can catalyze or fetter employee development.

I suppose that failures which occur in the induction and probationary processes can be explained as an understandable afterbirth which follows the climax of hiring an employee. However, such failures are too damaging to the potential of a development program to be accepted as inevitable experiences (birth trauma, if you will) in employee careers.

This probationary period has a double significance where unionized personnel is concerned. Because of this, it is most important for us to determine if each probationary employee can be trained and developed. Here again is a place for testing, personal interview, and counseling. Once a probationary employee completes this period, he can become an everlasting liability or asset to your company.

Having now reached the point where traditional analysis might say that employee development begins, we should pause to consider the perilous paradox which must be recognized in formulating a systematized program of development. The paradox is that the program must simultaneously stimulate to the full the development of some employees and while inhibiting or limiting that of others.

Theoretically speaking, it can be argued that so far as number of employees is concerned, industry has a larger task in helping employees to adjust to their lack of opportunities for growth and improvement than in fostering their desire for improvement through development. How can this be so? The reason is most simply given by saying "A company can have but one president," or "There have to be more Indians than chiefs."

The facts of industrial life tend to suggest that this is more a theoretical problem than a practical one. Most industrial enterprises are growing farther from having to worry about lack of improved job opportunities for developing employees.

Although the problem presented by the paradox which I have cited is not a general one in practice, it nevertheless can and does arise in specific situations. The establishment of any systematic program for employee development should take into account and provide for this eventuality. For I venture to suggest that the second most fertile source of impediments to an effective development program (second to the traumas of induction and probation) is the development of promotable employees for whom no promotions are available.

Given processes of recruitment, hiring, induction and probation which do not inhibit the potential of a development program, how shall we formulate the program.

Sound Rating System

The first ingredient should surely be a sound system for rating employees. It must remain beyond the scope of these remarks to dwell in detail on rating and evaluation systems. However, the following general observations seem to me pertinent and the least to be said by way of articulating the rating process to employee development.

It seems clear that a good rating process is one of the most valuable development activities which can be adopted by any public utility, not only for the persons who make the ratings, but also for those rated.

The rating process should be a line management (not staff) function and the primary responsibility for preparing a rating should be that of the immediate supervisor of the person rated. Maximum development effect for the latter will result only if his rating is reviewed with him. Similarly the rating should be reviewed with its author by one of his supervisors. In this way the rating process can serve not only as development activity for all concerned but will also furnish a check on the processes of recruitment, selection for hire, placement, induction and probation.

Evaluation Factors

The factors of evaluation which are includible in a rating plan are legion. Any factors incorporated in a plan should be comprehensible to the rater and to the person rated. They should, to the maximum extent possible, call for specific and factual judgments. In sum, ratings should afford a basis for evaluating the growth of an employee's ability, productivity and capacity for responsibility.

A formalized rating process designed in accordance with the foregoing principles will, as I have suggested, in itself do much to promote employee development. Development will be stimulated even if the rating process is purely one of subjective evaluation with no specific action resulting directly from the ratings. Operating thus, the rating process will also tend to protect against setbacks to development which result from favoritism and snap judgments in dealing with employees and which are likely to occur in the absence of a uniform and systematic rating process. Rating evaluations are especially valuable where there are no objective records for measuring employee performance and development.

If the rating process is used as an immediate basis for recognizing employee development, the r e w a r d s which are conditioned on the ratings can serve as a potent incentive to development. Rewards which can be made dependent on the rating process include promotions, changes in work assignments, wage increases, and other forms of recognition. The effect and significance of these incentives incorporated in a systematized development program seem too obvious to warrant elaboration beyond mere statement.

I have suggested that an employee rating system is the first ingredient necessary for a program of employee development. In addition to its di-

rect effects in the development program, the rating system will provide a running inventory of the personnel resources of the enterprise. As a basis for selecting specific programs of training as additional elements of the development program, a similar inventory of future personnel requirements must be prepared with a timetable of when these requirements will mature. The inventory of personnel requirements should include job classifications and descriptions for all present jobs and all jobs to be established. As part of each job description there should be a record of all special qualifications required for the job, e.g., craft skills, licenses, background, experience, training, etc. Since it can safely be assumed that future personnel requirements are constantly changing, a systematic process for revising the inventory should be established.

With provision made for continuing inventories of personnel resources and requirements, it becomes possible to select specific training activities, and since there is no dearth of such activities to choose from, the task of choosing from those available will be time-consuming, but it should not be difficult to choose wisely and with confidence.

Training Activities

Some of the training activities from which choice may be made are:

1. *On-the-job training*—This training usually takes place during an employee's normal work schedule and might include the following activities:
   a. Formalized apprentice training courses.
   b. Lectures and meetings.
   c. Demonstrations.
   d. Exhibits.
   e. Visual aids.
   f. Practical experience.
   g. Vestibule school.
   h. Plant tours.

Time so spent by a non-supervisory employee in these activities is almost always compensable and under the Wage-Hour Act it is mandatory unless attendance is voluntary on the part of the employee and does not have any effect in improving the employee's skill in his immediate job.

2. *Off-the-job training*—This training usually takes place outside of an employee's normal work schedule, but some can be so taken to partly coincide with an employee's normal schedule. These activities are as follows:
   a. Correspondence courses.
   b. Seminars and workshops.
   c. Discussion groups.
   d. Formal education facilities available at day and night schools and colleges and universities.
   e. Specialized industry training courses.
   f. Plant tours.
   g. Special courses underwritten by the company.
   h. Co-operative student courses.
   i. Membership in trade associations and professional societies.

Time so spent by a non-supervisory employee in these activities is not usually compensable unless attendance is mandatory and the employee is improving his skills in his current job.

An education-aid plan, underwritten by a company, to assist employees in furthering their education along general or special lines, has a profound effect in stimulating employee interest in some of the items listed above.

As we approach the level of supervision, we get into specialized management development programs. Some take advantage of special outside courses, which are available at many institutions of higher learning and trade associations. Along with these, many companies resort to the practice of moving promising supervisory candidates through the various phases of the business before assigning them to a definite area.

In view of the differences which exist among various industrial enterprises, it does not seem possible to formulate any rules to be followed in selecting particular training activities. The specific training, needs, and the budgetary allowances for meeting those needs, in different companies will to a large extent determine the selection. Because of the large number of activities from which to choose in making selections, companies with very similar needs and budgets may choose widely differing activities because of differences in the taste of management officials making the selection.

Whatever activities are selected, however, a few general rules can be laid down to guide the process of incorporating the activities into the overall program of employee development.

First, the selection of activities should be a responsibility of line management and not the industrial relations staff. The industrial relations staff should advise regarding and perhaps participate in the selection, but it should not be given responsibility for the selection. If responsibility for the establishment of an overall development program and for the selection of specific training activities is fixed in line management, the risk will be minimized that employee participation in training activities will be viewed as an undesirable interference with the business of the enterprise.

Second, great care should be taken in selecting employees for specific training activities. The background of each prospective employee should be reviewed thoroughly after which a battery of tests may be used to determine if the prospect has the temperament and aptitude to perform the type of work that lies ahead. Every employee selected should understand why he has been chosen and what is expected of him with respect to his particular training. Every effort should be made to assure that employees who are not selected will not be demoralized because they have not been chosen. All employees should know about the development program, its purposes and how it operates. If the program is well understood by all, the selection of employees for specific training activities should not present serious difficulties.

The Third Rule

Third, assignment of employees to training activities should always be treated as a positive step. Anyone who is to receive training should be made to feel that he is being helped to develop—to progress—to grow. He should not feel that his assignment is for corrective or therapeutic purposes. In this way resistance to training will be minimized.

Fourth, the development program should make specific provision for what will happen to an employee who fails to measure up to what is expected of him in a particular training activity. This provision should be as well understood as other features.

Fifth, provision should be made for systematic evaluation of training activities. This can perhaps best be done by means of the employee rating system since meaningful evaluation of training activities can only be obtained from observation of the effects

of training on those employees who receive training.

In recent years it has seemed that everyone considers that any topic in the field of industrial relations, or industrial management generally, must be discussed in the idioms of human relations and communication. I recognize, of course, that much that I have been proposing depends for effective implementation, or is in nature, good industrial "human relations" and "communication."

Training and development programs range from very simple to the most elaborate plans, but if you don't have a program, you should learn to creep before you walk, which infers that it might be better to start off with a simple plan and elaborate on it as you go along. A simple framework, which you might consider in starting off with is as follows:

1. A sound orientation program.
2. A training program for each job which will define clearly the training steps to be followed. You should ask yourself if detailed job descriptions are necessary.
3. Trainers should be selected from the working group or subordinate supervisors. Should your trainer know the particular job and be able to talk the same language as the trainee?
4. Periodic meetings with the employee in training to give them company background and up-to-date information about the company. Is this a prestige builder?
5. Frequent staff meetings with subordinate supervisors to discuss departmental problems including training. Can this become an asset to your communication program?
6. Make a continuing use of your communication program by using posters, reading racks, bulletins, letters and your company magazine.
7. And finally, complete records and periodic checks of all trainees along with the desired testing and periodic evaluations are most important.

With your framework established, consideration must be given to organizing the training function. A few thoughts for your consideration on this phase are as follows:

1. Be sure your trainer is qualified to train.
2. Be sure that the trainee understands the program and to who he should turn for help.
3. Make training a part of every job and every supervisor's responsibility.
4. Plan the training program and follow it closely until obvious changes in it are apparent. Then be objective and make these changes.
5. Solicit the aid of all employees in setting up the program. By so doing, you will obtain the wholehearted support of your entire personnel.

Is training expensive? Yes, and it can be figured out almost to the penny. But, on the other side of the ledger we find an item of how much it costs not to train a man. This cost cannot be resolved accurately, but considering all factors, it can very easily become the more expensive of the two.

To wrap up the subject of employee development, I would like to step back again for a minute to the overall view of the subject with which I started my remarks. As I said, employee development is the growth of employees in ability, efficiency and capacity for responsibility. This is a dynamic process which is continuously in operation; that is, employees are continuously developing in these respects. I have been talking about development only as a positive process—a process of improvement. We should of course recognize that forces are at work in any industrial environment which tend to inhibit or even reverse the development process. I have mentioned the sources of some of these retarding and retrogressive forces.

If we can correctly interpret Galileo as suggesting that employee development is a process of nurturing what is within employees, then we must keep in mind that everything we do in the field of industrial relations has a bearing on employee development. Everything we do which affects people affects to some degree their capacity for growth, the rate at which they will grow and the kind of growth which they will display. Assignments of work, promotions, demotions, transfers, safety programs, disciplinary practices, suggestion systems, grievance handling, layoffs and recalls, and so on—all these will affect employee development. In short, industrial managers must be individually concerned about employee development in all their communications and relations with employees.

Special Program to Feature PEA's Golden Anniversary Meeting

THE 50th annual meeting of the Pennsylvania Electric Association, Oct. 2-3, at the Bellevue-Stratford Hotel, Philadelphia, will be attended by representatives of Pennsylvania's 23 independent, investor-owned electric light and power companies.

To celebrate the Golden Anniversary, the association will have as its theme "50 Years of Progress . . . and the Road Ahead." Delegates will be welcomed by R. G. Rincliffe, president of Philadelphia Electric Co. George M. Gadsby, chairman of the board of Utah Power and Light Co., will be one of the speakers at the opening session Wednesday morning.

Dr. James Creese, president of Drexel Institute, will speak at the afternoon session on Wednesday, Oct. 2. He will discuss "Men and Power." The Hon. Joseph Sharfsin of the Pennsylvania Utility Commission also will address the delegation.

Three of the state's electric utility leaders will be featured at the morning session on Oct. 3. Chas. E. Oakes, president of Pennsylvania Power and Light Co., will discuss financing the future electric industry. P. H. Powers, president of West Penn Power Co., will talk on long-range planning as an aid to management. P. A. Fleger, chairman of the board of Duquesne Light Co., will speak on current developments of importance to the industry.

J. Carlton Ward, Jr., president of Vitro Corp. of America, at a dinner meeting Oct. 2 will discuss the nation's atomic future. Formerly president of Fairchild Engine and Airplane Corp. and chairman of the board of Thompson Industries, Inc., Mr. Ward was one of the first proponents of atomic energy for the propulsion of aircraft.

Personals

Walter Bouldin, executive vice president of Alabama Power Co., was elected president of the utility, succeeding **Lewis M. Smith** who resigned as president to become vice chairman of the board. **E. C. Easter,** vice president in charge of sales, was elected an executive vice president.

Mr. Bouldin received his A.B. degree from the University of Alabama and his LL.B. from Harvard Law School in 1928. Returning to Alabama, he joined the law firm of Martin, Thompson, Foster and Turner and was with this and successor firms until 1952. At that time he was elected financial vice president of Alabama Power and in 1955 was elected executive vice president.

Mr. Smith has been with the company 34 years, serving as chief electrical engineer, director of public relations, vice president and general manager and since August, 1952, as president. He is a graduate of the College of Engineering, University of Alabama.

Mr. Easter joined the utility in 1927 as chief agricultural engineer. For several years previously and following his graduation from Alabama Polytechnic Institute, he had been engaged in studies looking toward better economic conditions on Alabama farms through the use of electricity. Since 1949 he has been vice president in charge of sales.

Floyd I. Fairman, vice president of Kentucky Utilities Co., has been elected president of the company. **R. M. Watt,** president since 1935, is the new chairman of the board and chief executive officer.

Mr. Fairman joined the company in 1926 and served as district and division engineer, commercial manager, industrial power sales engineer and director of customer service and advertising prior to his election as vice president in 1952. He also has been elected a member of the board. He is chairman of the Kentucky State Chamber of Commerce Area Development Committee and is a past president of Public Utilities Advertising Association. He was selected as the most outstanding citizen of Lexington, Ky., in 1953 by the Lexington Optimist Club. Since the end of World War II, he has been a leader in the movement to advance Kentucky as an industrial state to complement its agricultural economy.

WALTER BOULDIN

With Kentucky Utilities since 1912, Mr. Watt was one of the first five employees of the company. He was named superintendent of construction and maintenance in 1914 at Pineville, Ky. He served as manager of the Mountain Division for 11 years before becoming executive vice president in 1931. He has been a director of the company since 1927. Mr. Watt for several years was chairman of the Area Development Committee, Industrial Finance Committee and Executive Committee of the Kentucky Chamber of Commerce. He holds a B.S. degree in electrical engineering from the University of North Carolina and LL.D. from Transylvania College.

Carl O. Carlson, vice president in charge of electric operations of the Atlantic City Electric Co., has been named to the new position of senior vice president. **James P. Hayward,** manager of electrical operations since 1953, succeeds Mr. Carlson as vice president. Mr. Carlson will coordinate the activities of the engineering, production, commercial, transmission and distribution departments. A 31-year veteran with the utility, he previously served in various capacities including distribution engineer and superintendent of distribution. He is a 1920 graduate of Yale University. Mr. Hayward began his career with the company as a survey assistant in 1925.

Elevation of two vice presidents to senior vice presidents and promotion of five executives to vice presidents have been announced by Montana Power Co. **T. L. Doran** and **C. J. Burns** were advanced to positions of senior vice presidents. Mr. Doran is in charge of operations and Mr. Burns is responsible for labor relations, personnel, public relations and sales for the Montana electric utility.

New vice presidents are: **Cecil H. Kirk,** superintendent of transmission and distribution for the entire system, who will be responsible for electrical operations; **W. W. German,** assistant to the vice president; **L. S. Stadler,** manager of gas and oil, who will direct natural gas operations; **Colin W. Raff,** executive assistant to the president; and **Harry C. Donaldson,** treasurer.

Mr. Kirk has been with the company 35 years, joining the utility immediately after receiving his electrical engineering degree from the University of Wisconsin. He was named superintendent of electric distribution in 1941 and in 1949 became superintendent of transmission and distribution. Mr. German, an electrical engineering graduate of Cornell University, has been with the company 26 years. A Stanford University graduate, Mr. Stadler has been with the company since 1931. Mr. Raff joined the company's advertising staff in 1949 and later became head of that department. In 1953 he was named executive assistant to the officers of the utility. Mr. Donaldson has been with Montana Power 30 years and recently was promoted from assistant secretary and assistant treasurer to treasurer of the company.

John F. Pennington, vice president in charge of operations for Georgia Power Co., has assumed the post of vice president in charge of engineering and operations. In this capacity he also will supervise the company's land, purchases and stores, fuel supply and claim departments. The addition of his new responsibilities re-

sulted from the recent retirement of **Ray N. Benjamin,** former vice president and chief engineer. Mr. Pennington has served as operating manager, chief engineer, and mechanical engineer. He joined the utility 39 years ago as a construction helper.

Vice President **George F. Foley** of the Florida Power Corp., has been elected vice president, secretary and treasurer of the utility and a member of the board of directors. Mr. Foley succeeds E. K. IlgenFritz who will continue to serve the company as a financial consultant.

Edward G. Twohey has been elected a vice president of the Narragansett Electric Co., a subsidiary of the New England Electric System. Mr. Twohey, who received his electrical engineering degree in 1925 from Norwich University, joined Lowell Electric Light Corp. as a student engineer. In 1929 he became assistant to the manager of the Worcester County Electric Co. and rose the next year to merchandise manager of Lawrence Gas & Electric Co. He was named a vice president of Northampton Electric Co. in 1942 and later held a similar office in the Worcester utility. Succeeding Mr. Twohey as chief executive officer of the NEES gas division is **Harold L. Dalbeck,** former assistant treasurer of NEES subsidiaries northeast of Boston.

Merrimack-Essex Electric Co., new operating utility composed of five New England Electric System subsidiaries, has as its president **Newell A. Clark,** who has served as principal officer of all NEES companies in northeastern Massachusetts since 1949. Vice president and general manager is **Edward F. Ziegler,** vice president in charge of labor relations for system companies since 1952.

Those elected as vice presidents of the organization are **William E. Casey, Thomas J. Hickey, H. Sherman Holcomb, Albert Leddy** and **Ray Pike, Jr.**

Merrimack-Essex was formed through the merger of Amesbury Electric, Essex County Electric, Lawrence Electric and Lowell Electric companies.

Mr. Clark began his career with the system in 1921 as station foreman for Fall Mountain (Vt.) Electric Co. He advanced to manager of the Quincy Electric Co. in 1930; district manager at Leominster, Mass. in 1934, and in 1944 to Northampton district manager.

Mr. Ziegler joined the system in 1929 as district engineer at Lawrence, Mass. and rose to become district manager at Lowell, Mass. in 1934. Appointed vice president at Lowell in 1943, he became assistant district manager in 1948 and in 1951 assistant vice president of New England Power Service Co.

Mr. Casey is former vice president and manager of Lawrence Gas & Electric Co.; Mr. Hickey was vice president of Lowell Electric Light Corp.; Mr. Holcomb was vice president of Salem Electric, Gloucester Electric and electric operations in Beverly; Mr. Leddy was manager of the Amesbury Electric Light Co.; and Mr. Pike is the former manager of Haverhill Electric Co.

F. Warren Cooper, vice president and comptroller of Public Service Electric and Gas Co. since 1954, has retired after 37 years of service with the company. He started with the utility in 1920 as an accountant, became chief accountant, assistant general auditor, assistant comptroller and comptroller in 1950. He is a graduate of New York University. Active for many years in various activities in which the company is interested, Mr. Cooper served on the EEI Accounting and Executive Committees.

Otto Brunemeister, Jr., comptroller of the Ohio Edison Co., was recently elected vice president of the company. **E. A. Ladd,** the company's general auditor, was elected comptroller. Mr. Brunemeister has been the Ohio Edison comptroller for the past 21 years. Mr. Ladd has been associated with the electric utility in auditing work since 1922. He was named general auditor in 1950.

The following organizational changes have been announced by Potomac Electric Power Co.: **Harry E. Yeide,** commercial manager; **J. S. Bartlett,** manager, area development; **Herbert F. G. Main,** manager, government services; **Stephen Woodzell,** assistant manager, electric system. A graduate of Lehigh University, Mr. Yeide has been manager of the distribution department since 1948. After serving as managing director of the Electric Institute in Washington for 11 years, Mr. Bartlett in 1946 became commercial manager of the utility. He attended the University of Wisconsin. Mr. Main has been with the company 25 years and was manager of the property records department since 1956, prior to which he was manager of the rate department. He is a graduate of Lowell Institute of MIT. Mr. Woodzell, with the utility 23 years, is a graduate of George Washington University. His association with the company has been in substation, distribution and electrical engineering departments.

Robert K. Zimmerman, graduate of Rutgers University, has been named general sales manager of Kansas City Power & Light Co. He joined the utility in 1950 as supervisor of employee education and in January of this year was appointed assistant to the vice president. Before joining KCP&L, Mr. Zimmerman was employed by Public Service Electric and Gas Co.

J. Robert Welsh, president of Southwestern Gas & Electric Co., was named president of the Southwest Atomic Energy Associates, a group of 13 electric utilities formed recently to conduct research studies to develop a practical use of nuclear energy as a supplemental fuel for future electrical needs. Mr. Welsh has been with Southwestern 17 years. Vice presidents of SAEA are **W. O. Turner,** president of Louisiana Power & Light Co., and **Gordon W. Evans,** president of Kansas Gas & Electric Co.

Elmer Gates has been appointed manager of the rate department for Middle West Service Co., business and engineering consultants of Chicago. With the company six years, Mr. Gates has had extensive experience in rate matters. He joined Middle West in 1951 after five-and-one-half years on the staff of the California Public Utilities Commission. There he dealt with rate and service problems for electric and gas utilities, earnings investigations of gas companies and similar matters. He has completed rate assignments for Middle West in Mexico, Cuba and

Rhodesia, Africa. Mr. Gates received an engineering degree from Cornell University in 1932.

William Parkerson, rate specialist with the Middle West Service Co. of Chicago for 12 years, has been appointed assistant manager of the rate department of American & Foreign Power Co. Inc. in New York. Mr. Parkerson has been a member of the EEI Rate Research Committee and the Joint AEIC-EEI Heat Pump Committee. He was graduated from Tulane University and did graduate work at the University of Pittsburgh and the University of Illinois, where he received a master of science degree in 1922. He entered the utility field in 1925 as a power sales engineer for Gulf States Utilities Co. at Lake Charles, La. He received an engineering degree from Tulane.

George L. Morris has been elevated from district operating superintendent of Northern Indiana Public Service Co. to manager of electric operations. In his new capacity he will coordinate all electric operations and distribution of power throughout the company's 22 districts.

Toward Effective Supervision

(*Continued from page* 303)

size this again for it is the key to our desire for more effective supervision. If we could get into our communications a fraction of the interest that goes along with the grapevine type of communications, we would have it made. We can't achieve that, but we can know better the things we are trying to convey. We can be more effective in presenting such material to our supervisors. We can give them aids and assistance of one sort or another so that their people will have a better understanding with corresponding acceptance of the story presented. And then we can develop ways and means of a follow up to be sure that the intent of the message has come through in the right manner to the desired level.

Then we will have effective communications.

Then we will have effective supervision.

250 Local, State Committees Expected to Support Fourth National Electrical Week

APPROXIMATELY 250 state and local National Electrical Week committees, representing thousands of cities and towns throughout the United States and Canada, are expected to be formed for participation in the fourth annual observance of the week, Feb. 9-15, 1958, according to NEW Chairman Merrill E. Skinner.

Mr. Skinner, vice president and director of sales for Union Electric Co. in St. Louis, reported that the national NEW committee received detailed reports on the 1957 observance from 177 state and local committees, in 40 states, five Canadian provinces, the District of Columbia, and Hawaii. In some instances, an individual report covered NEW activities in more than 200 cities and towns.

Basis for 1958 Plans

"The many excellent suggestions and successful activities in these reports will form the basis for our 1958 NEW planning guide and kit of materials which will be distributed throughout the electrical industry this October," Skinner said.

"Our advance contacts indicate we will have at least 250 state and local committees formed for the 1958 observance."

NEW is sponsored, with financial support, by 11 of the principal trade associations in the electrical industry, representing utilities, manufacturers, distributors, contractors, dealers, inspectors, leagues, and electrical workers. It is endorsed by 15 other associations.

Mr. Skinner said NEW's basic purpose would be unchanged for the 1958 observance—"to focus attention on the contributions of electricity to our way of life."

Umbrella Activity

"It will be carried out as an umbrella activity, with strong support from national advertisers," he said, "to provide a beginning-of-the-year-springboard for the various programs and educational or promotional objectives of our industry.

"Its principal function is to provide a stage upon which each group and company within the industry can produce an information job of particular importance to its primary interest—whether that interest be in the field of improved wiring, a company's community relations, employee morale, the sale of merchandise, or whatever.

"The great value of NEW lies in its cumulative impact, with all the many and varied activities that are carried on simultaneously in early February each year."

Developing Morale and Loyalty

(*Continued from page* 309)

and idealistic concepts which we must approach carefully and understandingly. More important, we must do all we can to reconcile business practices with these concepts.

If free enterprise is to survive and bring all the material blessings it promises, our fundamental job, as industrial relations men, is to accelerate the trend of recent years to conduct it on an even higher moral and ethical plane. It is not good enough to say our current principles and methods of conducting business are on as good an ethical and moral plane as some mythical average citizens. They must be better—far better—if we who manage business want to continue our leadership. The plain fact is we can no longer be leaders in a strictly economic sphere alone.

In meeting this challenge we can well heed the words of Judge Learned Hand: "The spirit of liberty is a spirit which is not too sure it is right . . . which seeks to understand the minds of other men and women . . . which weighs their interests along side its own without bias."

If we remember those wise words as we try to build a better industrial organization, we will earn understanding for our businesses and companies and we can be confident that the best system yet devised by man will survive through the ages.

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D. E. KARN.....Consumers Power Co.
GEORGE L. MACGREGOR.....Texas Utilities Co.
LYLE MCDONALD....Public Service Electric and Gas Co.
PAUL B. MCKEE.....Pacific Power & Light Co.
I. L. MOORE.....New England Electric System
W. C. MULLENDORE.....Southern California Edison Co.
GROVER C. NEFF.....Wisconsin Power and Light Co.
J. S. OSBORNE.....Central & South West Corp.
PHILIP SPORN.....American Gas and Electric Co.
L. V. SUTTON.....Carolina Power & Light Co.
FRANK M. TAIT.....The Dayton Power and Light Co.
J. B. THOMAS.....Texas Electric Service Co.
E. S. THOMPSON....The West Penn Electric Co. (Inc.)
ALLEN VAN WYCK.....Illinois Power Co.

CHAIRMEN OF EDISON ELECTRIC INSTITUTE COMMITTEES (1957-1958)

ACCOUNTING

Accounting Division Executive, J. D. ELLIOTT.....The Detroit Edison Co., Detroit, Mich.
Coordinator of Customer Activities Group, C. J. BERNER.....Wisconsin Electric Power Co., Milwaukee, Wis.
Customer Accounting, M. F. YOUNG.....The Connecticut Light & Power Co., Hartford, Conn.
Customer Collections, J. E. HEVRON.....New Orleans Public Service Inc., New Orleans, La.
Customer Relations, H. R. POTTS.....Columbus and Southern Ohio Electric Co., Columbus, Ohio
Coordinator of General Activities Group, P. R. LAWSON.....Pennsylvania Electric Co., Johnstown, Pa.
Depreciation Accounting, O. E. SMITH.....Baltimore Gas and Electric Co., Baltimore, Md.
General Accounting, G. F. JONES.....Potomac Electric Power Co. Washington, D. C.
Internal Auditing, R. B. TRITTON.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Plant Accounting and Property Records, G. A. BROWNMILLER.....The Connecticut Light & Power Co., Hartford, Conn.
Taxation Accounting, C. E. YORK.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Coordinator of Special Activities Group, C. T. DWIGHT.....The Hartford Electric Light Co., Hartford, Conn.
Accounting Developments Service, A. H. KERN.....Alabama Power Co., Birmingham, Ala.
Accounting Employee Relations, J. J. LEARY.....Boston Edison Co., Boston, Mass.
Application of Accounting Principles, V. A. KOS.....Commonwealth Edison Co., Chicago, Ill.
Electronic Accounting Machine Developments, R. W. BRITT.....Wisconsin Electric Power Co., Milwaukee, Wis.
Uniform System of Accounts, R. G. SCHNEIDER.....Virginia Electric and Power Co., Richmond, Va.

COMMERCIAL

Commercial Division Executive, T. O. MCQUISTON.....Metropolitan Edison Co., Reading, Pa.
Commercial Sales Group, R. I. BULL.....Ohio Power Co., Canton, Ohio
Farm Group, M. O. WHITHED.....Atlantic City Electric Co., Atlantic City, N. J.
Industrial Power & Heating Group, F. E. WIATT.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Residential Group, ROBERT L. COE.....Union Electric Co., St. Louis, Mo.
Special Services Group, B. L. PALM.....Central Illinois Public Service Co., Springfield, Ill.

ENGINEERING

Engineering & Operating Division Executive, C. W. FRANKLIN....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Electrical System & Equipment, H. E. DEARDORFF.....The Dayton Power and Light Co., Dayton, Ohio
Hydraulic Power, E. S. HARRISON.....Georgia Power Co., Atlanta, Ga.
Meter & Service, FLOYD SALMON.....Central Power and Light Co., Corpus Christi, Texas
Prime Movers, V. L. STONE.....Commonwealth Edison Co., Chicago, Ill.
Transmission & Distribution, W. M. PENNEY.....Union Electric Co., St. Louis, Mo.

GENERAL

General Division Executive, J. W. MCAFEE.....Union Electric Co., St. Louis, Mo.
Accident Prevention, I. R. DOHR.....Consumers Power Co., Jackson, Mich.
Area Development, S. F. MCGOWAN.....Northern States Power Co., Minneapolis, Minn.
Atomic Power, E. L. LINDSETH.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Awards, M. C. ALBRITTAIN.....Baltimore Gas and Electric Co., Baltimore, Md.
Electric Power Survey, ARTHUR S. GRISWOLD.....The Detroit Edison Co., Detroit, Mich.
Financing & Investor Relations, PAUL HALLINGBY, JR. .....Middle South Utilities, Inc., New York, N. Y.
Industrial Relations, E. J. BRILL.....Pennsylvania Power & Light Co., Allentown, Pa.
Insurance, D. E. WILLIAMS.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Legal, J. M. KEEGAN.....Consolidated Edison Co. of New York, Inc., New York, N. Y.
Membership, E. S. THOMPSON.....The West Penn Electric Co. (Inc.), New York, N. Y.
Purchasing and Stores, T. S. DUNSTAN.....Consolidated Edison Co. of New York, Inc., New York, N. Y.
Rate Research, L. W. FRANK.....Western Massachusetts Electric Co., Springfield, Mass.
Regulation, C. E. KOHLHEPP.....New Jersey Power & Light Co., Denville, N. J.
Research Projects, E. H. SNYDER.....Public Service Electric and Gas Co., Newark, N. J.
Statistical, A. E. BUSH.....The Detroit Edison Co., Detroit, Mich.
Tax Policy, C. B. MCMANUS.....The Southern Co., Atlanta, Ga.
Technical Assistance for Overseas Visitors, HARVEY BUMGARDNER.....The Detroit Edison Co., Detroit, Mich.
Transportation, R. E. HAMEL.....The Cleveland Electric Illuminating Co., Cleveland, Ohio

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In

September, 1957
In Two Sections—Section II

EDISON
ELECTRIC INSTITUTE
BULLETIN

Officers, Board of Directors, Committees and Committee Personnel of the Edison Electric Institute

Administrative Year, 1957-1958

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EDISON ELECTRIC INSTITUTE

OFFICERS

D. S. KENNEDY, *President* ..... Oklahoma Gas and Electric Co., Oklahoma City, Okla.
J. W. MCAFEE, *Vice President* ..... Union Electric Co., St. Louis, Mo.
EDWIN VENNARD, *Vice President and Managing Director* ..... 420 Lexington Ave., New York, N. Y.
H. S. SUTTON, *Treasurer* ..... Consolidated Edison Co. of New York, Inc., New York, N. Y.
A. B. MORGAN, *Secretary and Assistant Managing Director* ..... 420 Lexington Ave., New York, N. Y.

BOARD OF DIRECTORS

(*Terms expiring 1958*)

J. L. BATES,
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Rochester Gas and Electric Corp., Rochester, N. Y.

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Cambridge Electric Light Co., Cambridge, Mass.

C. B. DELAFIELD,
Consolidated Edison Co. of New York, Inc., New York, N. Y.

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Potomac Electric Power Co., Washington, D.C.

R. H. GERDES,
Pacific Gas and Electric Co., San Francisco, Calif.

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Iowa Power and Light Co., Des Moines, Iowa

E. L. LINDSETH,
The Cleveland Electric Illuminating Co., Cleveland, Ohio

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Central Illinois Public Service Co., Springfield, Ill.

C. E. OAKES,
Pennsylvania Power & Light Co., Allentown, Pa.

H. T. PRITCHARD,
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K. M. ROBINSON,
The Washington Water Power Co., Spokane, Wash.

L. M. SMITH,
Alabama Power Co., Birmingham, Ala.

HAROLD TURNER,
American Gas and Electric Service Corp., New York, N. Y.

(*Terms expiring 1959*)

H. J. CADWELL,
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CARL J. FORSBERG,
Wisconsin Power and Light Co., Madison, Wis.

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Northern States Power Co., Minneapolis, Minn.

C. E. KOHLHEPP,
Jersey Central Power & Light Co., Asbury Park, N. J.

C. R. LANDRIGAN,
The Detroit Edison Co., Detroit, Mich.

J. E. LOISEAU,
Public Service Co. of Colorado, Denver, Colo.

EARLE J. MACHOLD,
Niagara Mohawk Power Corp., Syracuse, N. Y.

D. C. MCKEE,
The Empire District Electric Co., Joplin, Mo.

P. H. POWERS,
West Penn Power Co., Greensburg, Pa.

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Philadelphia Electric Co., Philadelphia, Pa.

R. E. RITCHIE,
Arkansas Power & Light Co., Little Rock, Ark.

W. H. SAMMIS,
Ohio Edison Co., Akron, Ohio

J. R. WELSH,
Southwestern Gas and Electric Co., Shreveport, La.

ERWIN H. WILL,
Virginia Electric and Power Co., Richmond, Va.

(*Terms expiring 1960*)

W. C. BECKJORD,
The Cincinnati Gas & Electric Co., Cincinnati, Ohio

W. C. BELL,
The United Illuminating Co., New Haven, Conn.

N. A. COCKE,
Duke Power Co., Charlotte, N. C.

J. F. DAVENPORT,
Southern California Edison Co., Los Angeles, Calif.

T. W. DELZELL,
Portland General Electric Co., Portland, Ore.

G. S. DINWIDDIE,
New Orleans Public Service Inc., New Orleans, La.

WILLIS GALE,
Commonwealth Edison Co., Chicago, Ill.

M. L. KAPP,
Interstate Power Co., Dubuque, Iowa

W. T. LUCKING,
Arizona Public Service Co., Phoenix, Ariz.

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Texas Power & Light Co., Dallas, Texas

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Savannah Electric and Power Co., Savannah, Ga.

J. J. MCDONOUGH,
Georgia Power Co., Atlanta, Ga.

A. R. SCHILLER,
Public Service Co. of New Hampshire, Manchester, N. H.

G. W. VAN DERZEE,
Wisconsin Electric Power Co., Milwaukee, Wis.

J. THEODORE WOLFE,
Baltimore Gas and Electric Co., Baltimore, Md.

EXECUTIVE COMMITTEE

C. B. DELAFIELD, R. ROY DUNN, ALLEN S. KING, E. L. LINDSETH, C. E. OAKES,
R. G. RINCLIFFE, K. M. ROBINSON, W. H. SAMMIS, G. W. VAN DERZEE

ADVISORY COMMITTEE 1957-1958

D. C. BARNES,
Virginia Electric and Power Co.
A. D. BARNEY,
The Hartford Electric Light Co.
J. B. BLACK,
Pacific Gas and Electric Co.
HARLLEE BRANCH, JR.,
The Southern Co.
W. L. CISLER,
The Detroit Edison Co.
C. P. CRANE,
Baltimore Gas and Electric Co.
T. G. DIGNAN,
Boston Edison Co.
EDGAR H. DIXON,
Middle South Utilities, Inc.
PHILIP A. FLEGER,
Duquesne Light Co.
GEORGE M. GADSBY,
Utah Power & Light Co.
D. E. KARN,
Consumers Power Co.
GEORGE L. MACGREGOR,
Texas Utilities Co.
LYLE MCDONALD,
Public Service Electric and Gas Co.
PAUL B. MCKEE,
Pacific Power & Light Co.
I. L. MOORE,
New England Electric System
W. C. MULLENDORE,
Southern California Edison Co.
GROVER C. NEFF,
Wisconsin Power and Light Co.
J. S. OSBORNE,
Central & South West Corp.
PHILIP SPORN,
American Gas and Electric Co.
L. V. SUTTON,
Carolina Power & Light Co.
FRANK M. TAIT,
The Dayton Power and Light Co.
J. B. THOMAS,
Texas Electric Service Co.
E. S. THOMPSON,
The West Penn Electric Co. (Inc.)
ALLEN VAN WYCK,
Illinois Power Co.

Objectives of the Edison Electric Institute

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

Personnel of EEI Committees for 1957-1958

Appointments to the Edison Electric Institute Committees for the Administrative Year 1957-58 have been announced by Donald S. Kennedy, President of the Institute. Personnel of the committees are listed on the following pages.

Accounting Division

ACCOUNTING DIVISION EXECUTIVE COMMITTEE

Chairman, J. D. ELLIOTT, The Detroit Edison Co., Detroit, Mich.

Vice Chairman, C. T. DWIGHT, The Hartford Electric Light Co., Hartford, Conn.

N. J. AMBROSE, Stone & Webster Service Corp., New York, N. Y.

G. L. ANDRUS, New Orleans Public Service Inc., New Orleans, La.

*C. J. BERNER, Wisconsin Electric Power Co., Milwaukee, Wis.

H. W. BOOZER, Georgia Power Co., Atlanta, Ga.

G. J. BRETT, Niagara Mohawk Power Corp., Syracuse, N. Y.

*R. W. BRITT, Wisconsin Electric Power Co., Milwaukee, Wis.

*G. A. BROWNMILLER, The Connecticut Light & Power Co., Berlin, Conn.

OTTO BRUNENMEISTER, JR., Ohio Edison Co., Akron, Ohio

T. H. BUCKLEY, Public Service Co. of New Hampshire, Manchester, N. H.

A. L. BURGESS, Northern States Power Co., Minneapolis, Minn.

R. B. CARPENTER, Carolina Power & Light Co., Raleigh, N. C.

C. L. CARR, Potomac Electric Power Co., Washington, D. C.

J. V. CLEARY, Consolidated Edison Co. of New York, Inc., New York, N. Y.

L. W. COUGHLAN, Pacific Gas and Electric Co., San Francisco, Cal.

A. F. ELDER, The Washington Water Power Co., Spokane, Wash.

J. F. FARLEY, New York State Electric & Gas Corp., Ithaca, N. Y.

R. R. FORTUNE, Pennsylvania Power & Light Co., Allentown, Pa.

FRANK FREER, JR., Public Service Electric and Gas Co., Newark, N. J.

E. H. HEGMANN, Duquesne Light Co., Pittsburgh, Pa.

*J. E. HEVRON, New Orleans Public Service Inc., New Orleans, La.

R. W. HOGG, Atlantic City Electric Co., Atlantic City, N. J.

E. J. HOWE, Rochester Gas and Electric Corp., Rochester, N. Y.

E. M. IMHOFF, Pioneer Service & Engineering Co., Chicago, Ill.

*G. F. JONES, Potomac Electric Power Co., Washington, D. C.

R. P. KAESSHAEFER, The West Penn Electric Company Inc., New York, N. Y.

*A. H. KERN, Alabama Power Co., Birmingham, Ala.

J. W. KLUBERG, Consumers Power Co., Jackson, Mich.

*V. A. KOS, Commonwealth Edison Co., Chicago, Ill.

L. M. LA PORTE, Wisconsin Electric Power Co., Milwaukee, Wis.

*P. R. LAWSON, Pennsylvania Electric Co., Johnstown, Pa.

*J. J. LEARY, Boston Edison Co., Boston, Mass.

H. J. LYNE, Central Vermont Public Service Corp., Rutland, Vt.

F. H. MARKLEY, Pennsylvania Power & Light Co., Allentown, Pa.

G. R. MARRS, Texas Power & Light Co., Dallas, Texas

RODMAN MCCLANAHAN, Middle West Service Co., Chicago, Ill.

A. J. MCNULTY, Boston Edison Co., Boston, Mass.

A. G. MITCHELL, Philadelphia Electric Co., Philadelphia, Pa.

E. W. MOREHOUSE, General Public Utilities Corp., New York, N. Y.

R. A. OLSON, Kansas City Power & Light Co., Kansas City, Mo.

WALTER OTT, The Cincinnati Gas & Electric Co., Cincinnati, Ohio

C. E. PICHLER, Southern California Edison Co., Los Angeles, Cal.

F. J. PORTER, JR., Consolidated Edison Co. of New York, Inc., New York, N. Y.

*H. R. POTTS, Columbus and Southern Ohio Electric Co., Columbus, Ohio

S. E. RATCLIFFE, Virginia Electric and Power Co., Richmond, Va.

W. J. READY, South Carolina Electric & Gas Co., Columbia, S. C.

J. G. REESE, Houston Lighting & Power Co., Houston, Texas

L. E. REYNOLDS, The Connecticut Light & Power Co., Berlin, Conn.

NEILL RICHARDS, Kansas Gas and Electric Co., Wichita, Kansas

R. W. RICHARDSON, Mississippi Power Co., Gulfport, Miss.

L. G. ROEMER, Wisconsin Public Service Corp., Milwaukee, Wis.

F. W. ROGERS, Texas Electric Service Co., Fort Worth, Texas

E. E. ROLL, The Detroit Edison Co., Detroit, Mich.

H. H. SCAFF, Ebasco Services Inc., New York, N. Y.

*R. G. SCHNEIDER, Virginia Electric and Power Co., Richmond, Va.

W. C. SCHOEPPE, Florida Power Corp., St. Petersburg, Fla.

*O. E. SMITH, Baltimore Gas and Electric Co., Baltimore, Md.

A. P. THOMPSON, Iowa Power and Light Co., Des Moines, Iowa

* Ex-officio.

*R. B. TRITTON, The Cleveland Electric Illuminating Co., Cleveland, Ohio
R. B. TULPIN, Central Illinois Public Service Co., Springfield, Ill.
R. O. WHITMAN, American Gas and Electric Service Corp., New York, N. Y.
G. H. WIER, Commonwealth Edison Co., Chicago, Ill.
G. R. WOEHLER, Southern Indiana Gas and Electric Co., Evansville, Ind.
A. R. WOOD, The United Illuminating Co., New Haven, Conn.
*C. E. YORK, The Cincinnati Gas and Electric Corp., Cincinnati, Ohio
*M. F. YOUNG, The Connecticut Light & Power Co., Berlin, Conn.
B. E. ZINN, New England Electric System, Boston, Mass.

CUSTOMER ACTIVITIES GROUP

Coordinator, C. J. BERNER, Wisconsin Electric Power Co., Milwaukee, Wis.

Customer Accounting Committee

Chairman, M. F. YOUNG, The Connecticut Light & Power Co., Berlin, Conn.

Vice Chairman, D. M. ARNOLD, Pennsylvania Power Co., New Castle, Pa.

T. E. AUSTER, Public Service Co. of Oklahoma, Tulsa, Okla.
W. E. BALDWIN, Alabama Power Co., Birmingham, Ala.
G. L. BARNES, Consumers Power Co., Jackson, Mich.
F. F. BEISEL, Pennsylvania Power & Light Co., Allentown, Pa.
C. D. BELANGER, The Hartford Electric Light Co., Hartford, Conn.
R. W. BROWN, Niagara Mohawk Power Corp., Syracuse, N. Y.
H. C. BULLION, The Detroit Edison Co., Detroit, Mich.
WILLIAM BURRITT, Central Illinois Electric and Gas Co., Rockford, Ill.
C. A. CAULFIELD, The Washington Water Power Co., Spokane, Wash.
S. A. COLE, New York State Electric & Gas Corp., Ithaca, N. Y.
J. F. COMEFORD, Philadelphia Electric Co., Philadelphia, Pa.
J. M. CONLIN, Western Massachusetts Electric Co., Springfield, Mass.
S. N. COREY, Florida Power Corp., St. Petersburg, Fla.
G. G. COURTOIS, Union Electric Co., St. Louis, Mo.
T. A. DALEY, Consolidated Edison Co. of New York, Inc., New York, N. Y.
A. A. DEL BONO, Boston Edison Co., Boston, Mass.
W. C. DREWRY, Southern California Edison Co., Los Angeles, Cal.
G. W. DUNLOP, Gulf States Utilities Co., Beaumont, Texas
T. C. EICKMEYER, The Dayton Power and Light Co., Dayton, Ohio
J. P. FEENEY, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.
E. A. FLETCHER, Potomac Electric Power Co., Washington, D. C.
J. M. GASQUE, South Carolina Electric & Gas Co., Columbia, S. C.
C. R. GIBBONS, Pennsylvania Electric Co., Johnstown, Pa.
G. J. GLUCK, Ohio Edison Co., Akron, Ohio
C. R. GOODE, JR., Virginia Electric and Power Co., Richmond, Va.
W. W. HALL, Ebasco Services Inc., New York, N. Y.
E. H. HALLIDAY, Utah Power & Light Co., Salt Lake City, Utah
P. G. HANLON, Atlantic City Electric Co., Atlantic City, N. J.
J. R. HEERY, The United Illuminating Co., New Haven, Conn.
G. F. HIGGINS, The Detroit Edison Co., Detroit, Mich.
W. I. HILL, Mississippi Power & Light Co., Jackson, Miss.
R. O. JACKSON, Stone & Webster Service Corp., New York, N. Y.
E. H. JOHNSMEYER, Idaho Power Co., Boise, Idaho
C. L. KASTEN, Pacific Gas and Electric Co., San Francisco, Cal.
W. C. KLING, Northern States Power Co., St. Paul, Minn.
T. A. KOSTANSKI, The Toledo Edison Co., Toledo, Ohio
J. D. LANG, Duquesne Light Co., Pittsburgh, Pa.
R. E. LINDNER, Central Illinois Public Service Co., Springfield, Ill.
J. C. LOWELL, Public Service Electric and Gas Co., Newark, N. J.
J. C. LUCHSINGER, The Cincinnati Gas & Electric Co., Cincinnati, Ohio
R. G. MAAS, Wisconsin Electric Power Co., Milwaukee, Wis.
JACK MANSELL, Dallas Power & Light Co., Dallas, Texas
F. D. MCAULEY, New England Power Service Co., Boston, Mass.
J. T. MCKAY, New Orleans Public Service Inc., New Orleans, La.
G. E. MINISTER, Columbus and Southern Ohio Electric Co., Columbus, Ohio
G. MONTAGUE, Baltimore Gas and Electric Co., Baltimore, Md.
F. G. MOON, Public Service Co. of Colorado, Denver, Colo.
C. H. OLSON, Duquesne Light Co., Pittsburgh, Pa.
W. J. ROOT, Rochester Gas and Electric Corp., Rochester, N. Y.
W. F. ROWE, Long Island Lighting Co., Mineola, N. Y.
H. F. SCHUSTER, The Kansas Power and Light Co., Topeka, Kansas
J. R. SILVER, Kansas City Power & Light Co., Kansas City, Mo.
H. N. STEM, New Jersey Power & Light Co., Denville, N. J.
J. C. STEWART, Stone & Webster Service Corp., New York, N. Y.
M. W. STUBBS, Carolina Power & Light Co., Raleigh, N. C.
R. L. THOMAS, Indianapolis Power & Light Co., Indianapolis, Ind.
J. L. WALKER, The Dayton Power and Light Co., Dayton, Ohio
A. B. WILSON, Georgia Power Co., Atlanta, Ga.
R. C. YOUNG, JR., American Gas and Electric Service Corp., New York. N. Y.

* Ex-officio.

Customer Collections Committee

Chairman, J. E. HEVRON, New Orleans Public Service Inc., New Orleans, La.

Vice Chairman, F. U. NAYLOR, Pacific Gas and Electric Co., San Francisco, Cal.

R. V. BOWES, Philadelphia Electric Co., Philadelphia, Pa.
G. W. ERICKSON, Northern States Power Co., Minneapolis, Minn.
W. G. FOSTER, Gulf Power Co., Pensacola, Fla.
L. J. HAMILTON, Consumers Power Co., Jackson, Mich.
HARRY HECKER, Consolidated Edison Co. of New York, Inc., New York, N. Y.
J. C. HUMPHREYS, The Dayton Power and Light Co., Dayton, Ohio
E. R. JOHNSTON, West Penn Power Co., Greensburg, Pa.
E. B. KRUGER, Southern California Edison Co., Los Angeles, Cal.
J. C. LEACH, Commonwealth Edison Co., Chicago, Ill.
J. J. MILLI, Indianapolis Power & Light Co., Indianapolis, Ind.
E. C. PAXTON, Dallas Power & Light Co., Dallas, Texas
E. M. SELFE, The Detroit Edison Co., Detroit, Mich.

E. D. SMITH, The Washington Water Power Co., Spokane, Wash.
W. E. TRAVIS, The Cleveland Electric Illuminating Co., Cleveland, Ohio
O. J. VOSBRINK, Union Electric Co., St. Louis, Mo.
R. C. WAGAMAN, The Kansas Power and Light Co., Topeka, Kans.
G. A. WILSON, Public Service Electric and Gas Co., Newark, N. J.
MELVIN WUEST, The Cincinnati Gas & Electric Co., Cincinnati, Ohio

Customer Relations Committee

Chairman, H. R. POTTS, Columbus and Southern Ohio Electric Co., Columbus, Ohio

Vice Chairman, R. D. DAVIS, Ohio Power Co., Newark, Ohio

H. E. ARMSEY, Kentucky Utilities Co., Pineville, Ky.
R. C. BECKER, Central Hudson Gas & Electric Co., Poughkeepsie, N. Y.
G. A. BORKEY, Virginia Electric and Power Co., Richmond, Va.
PAT DILLARD, Texas Electric Service Co., Fort Worth, Texas
D. T. FAUST, West Penn Power Co., Ridgway, Pa.
D. D. FERRY, Union Electric Co., St. Louis, Mo.
H. R. FLANEGAN, Philadelphia Electric Co., Philadelphia, Pa.
A. E. GERLAUGH, The Dayton Power and Light Co., Dayton, Ohio
R. J. HAYWARD, Consolidated Edison Co. of New York, Inc., New York, N. Y.
J. S. HENDERSON, Wisconsin Electric Power Co., Milwaukee, Wis.
K. R. HINCKLEY, Houston Lighting & Power Co., Houston, Texas
KIMBALL JACK, The Washington Water Power Co., Spokane, Wash.
J. A. JETT, The Cincinnati Gas & Electric Co., Cincinnati, Ohio
C. E. LEWIS, JR., Kansas City Power & Light Co., Kansas City, Mo.
J. P. LOUGHNANE, Boston Edison Co., Boston, Mass.
H. F. MARTIN, Long Island Lighting Co., Mineola, N. Y.
E. A. MENKE, Commonwealth Edison Co., Chicago, Ill.
J. J. MISIC, The Cleveland Electric Illuminating Co., Cleveland, Ohio
E. C. NANN, Public Service Electric and Gas Co., Newark, N. J.
G. J. NELLIS, Niagara Mohawk Power Corp., Syracuse, N. Y.
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ENGINEERING AND OPERATING DIVISION EXECUTIVE COMMITTEE

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